DEVELOPMENT OF A HEALTH CAMPUS

Business Case

Submitted to the Ministry of Health
February 28, 2001

Submitted by

Nelson and Area Health Council
Health Services Group
The RPG Partnership

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EXECUTIVE SUMMARY

Introduction

The NAHC Health Campus represents a major new innovation in rural health care delivery. The goal for the Health Campus is to increase options available to health care consumers by bringing services together on a shared site and incorporating innovative approaches to acute, community - based and continuing care services. The Health Campus concept is an exciting change in approach to health. As the health care system continues to be pressured by increasing demands and decreasing human and financial resources, innovative changes must address these challenges. The Health Campus is a realistic and feasible solution. It incorporates community partners in the development of all components. It has broad community support. It is in keeping with what seniors and families have been requesting. Most importantly, the Health Campus offers support and education to the individual consumer in making informed choices for better health and wellness that will positively impact society as a whole. Several major concepts are integral to the development of the health campus concept.

WELLNESS FOCUS

- the 'wellness' focus inherent in the Health Campus model shifts the emphasis from 'receiving care' to 'individual wellness' resulting in a prevention focus rather than the traditional model of 'cure or care';
- the word 'campus' implies learning and education, which offers the individual options in maintaining health, and support towards that goal;
- as the health care traditional model shifts to the 'wellness' model, citizens will individually expect to hold greater responsibility in care decisions, which should positively impact health.

SHARED LOCATION OF SERVICES

Providing services from the same location:

- supports service integration and stream - lining of service delivery as well as cost savings;
- fosters the redesign of services and program structure to better meet clients' needs;
- incorporates the principles of Continuing Care Renewal to better meet the needs of our ageing population - the campus project incorporates a shift towards an enhanced range of community support options for clients and caregivers;
- closely unites residential care, assisted - living housing and support, adult day programs, home support, primary care, outreach services and acute primary and secondary level care;
- provides "one stop health services" and promotes the concept of "ageing in place" because the desired care options are available on the Health Campus site;
- improves access and stream - lines support services, creating efficiencies and savings.

EMPHASIS ON COMMUNITY-BASED SERVICES

This approach is intended to alleviate pressures on acute care services by building the community support programs that prevent admission and facilitate early discharge. These same programs can substitute or delay admission to residential care, making the best use of limited health care dollars.

ALTERNATIVE AND TRADITIONAL PRACTITIONERS

Wellness and health promotion are the primary focus for the Health Campus. An array of alternative and traditional health care practitioners will be housed on the site. Also, activities focusing on prevention and health education will be encouraged and promoted.

Health Campus Components

The main components planned within the Health Campus include:

- Acute Care Services and Community - Based Services
- Continuing Care Services
    - Multilevel Care Facility, including Adult Day Centre
    - Assisted - Living Housing
- space for a Health Professionals Centre
- space for a future Ambulance Station

The Health Campus will be developed on land adjacent to the existing Mount Saint Frances Hospital owned by NAHC. The project will be phased so that in the first phase a new multilevel care facility and assisted - living units will be built and the existing Mount Saint Francis Hospital demolished. In the second phase, the new acute care facility will be built. The plan also calls for disposal of the existing KLRH site.

☐ Acute Care Services

A new 60 bed acute care facility will be built to replace the 45 beds currently located in the functionally obsolete Kootenay Lake Regional Hospital and adding 15 new beds to assist the NAHC to meet current and future demands for acute care.

A key component that supplements the acute care facility is consolidation on-site of existing community - based services presently offered by NAHC and KBCHSS. These services include home support, transportation, community education, mental health, continuing care and community health. The creation of a joint KBCHSS/NAHC focus for community - based services will enhance the synergy between the two organizations and provide opportunities to strengthen the continuum of services to clients.

☐ Continuing Care Services

o Multilevel Care Facility

A new 86 - bed multilevel care facility will be built to replace the 79 residential care beds currently located in the functionally obsolete Mount St. Francis Hospital and adding 7 new beds to assist the NAHC to meet current and future demands for residential care. The proposed bed allocation would allow the NAHC to develop a state of the art care facility designed for complex care residents in a home like, normalized environment. Twenty bed pods would be designed to meet the needs of specific client groups including palliative care/end stage dementia; transitional care unit focussing on rehab/respite; enhanced special care unit for residents that present behavioural challenges; frail elderly; and individuals with moderate and severe dementia.

o Adult Day Centre

The Adult Day Centre will have space for 30 clients each day. It is estimated 20 would be from the population of frail elderly and 10 would be clients with moderate dementia. Participants could include frail seniors living in the assisted - living housing on the health campus as well as others from the community. Separate programming for dementia care will be provided. About 25% of the clients are expected to be seniors with mental health problems, including social isolation and behavioral difficulties. In addition, a Congregate Meals Program allows non-eligible seniors and family members to join clients for the nutritious hot noon meal.

- **Assisted - Living Housing**

The Health Council proposes the development of 60 assisted - living units that will provide combined care and housing for the frail elderly. The intent of the co-location of the housing unit on the site is to provide individuals with significant health related problems an opportunity to age - in - place in a secure, barrier free environment with access to supportive services such as meal service, health care, etc., when required.

☐ **Health Professionals Centre**

Currently space is allocated at Kootenay Lake Regional Hospital for the use of specialists such as internists, surgeons, paediatrician, visiting consultants and respirologist. Initial indications support the inclusion of space for health practitioners, office space for educational activities, as well as temporary hostel style accommodation for visiting medical personnel and a dental clinic. A "main street" concept for hair dressing services, a tuck shop, coffee bar, etc., could also be considered. This location would be attractive to alternative health care practitioners.

Project History and Rationale

For the last decade, the Nelson and Area Health Council (and the governance organizations which preceded it) and the Ministry of Health have been discussing the replacement of two key health care institutions in Nelson – Kootenay Lake Regional Hospital (KLRH) and the Mount Saint Francis Hospital (MSF). These discussions, and the assessments, studies and analysis that have been produced, have reached the stage where a decision to proceed is required. In July 2000, the Nelson and Area Health Council submitted a Capital Project Request to the Ministry of Health for capital funding for replacement of the two facilities.

This Business Case has been prepared in support of the development of the Health Campus. It includes information that expands upon the Capital Project Request previously submitted and provides the supporting documentation requested by the Ministry of Health and the Ministry of Finance and Corporate Relations.
During the last decade, numerous studies and evaluations related to acute and long term care capacity and facilities in the NAHC and West Kootenay Boundary Region have been undertaken. In 1999, NAHC undertook to substantially update and consolidate this work with the completion of a Service Analysis, a Community Needs Assessment, updated Facilities Status Reports, a preliminary Redevelopment Plan and Master Plan and a Site Feasibility Study. As a result of the studies completed in 2000, the NAHC concluded that the interests of health care consumers would best be served by replacing the two main health care facilities in Nelson. These conclusions were reached based on the following factors:

- in Nelson, the current number of acute care beds will not meet the needs of an expanding population - the result is increased staff workload, poor use of staff resources and considerable overtime costs to address overflow conditions;
- the lack of appropriate space prohibits the development of alternative programs that might reduce acute care bed utilization (surgical day care, ambulatory programs, etc);
- inadequate facilities to support patient care affect the morale of patients and staff and may have had a negative impact on recruitment of medical and other staff;

- money is being spent to address urgent safety issues to keep a decrepit facility operating when the funds are needed to support direct patient care;
- the way health care is delivered has changed since the existing facilities were built. Consumers want choices that may include admission to a care facility when necessary. However, more emphasis is now placed on providing an array of services to suit differing needs and local conditions as well as services closer to home.

The NAHC believes that it is significantly hindered in its ability to achieve its vision for health care in Nelson due to the decrepit condition of the KLRH and Mount St. Francis Hospital. It is no longer prudent to divert scarce capital and operating dollars to address physical and functional deficiencies in these facilities when resources are required to further the strategic directions of the NAHC.

The NAHC believes that creation of the Health Campus will provide the necessary access to quality patient care to the residents of Nelson and area as well as to consumers in adjoining health areas who wish to receive health care closer to their home.

Development of the Business Case

A Steering Committee was struck in October, 2000, to guide the development of the Business Case. The Health Services Group (HSG) was engaged to assist the Nelson Area Health Council with its development.

A Project Team was formed to prepare the Business Case. Core team members included representatives from NAHC, Kootenay Boundary Community Health Services Society (KBCHSS), The RPG Partnership (RPG), BC Buildings Corporation (BCBC) and HSG. The Project Team was responsible for developing specific project materials such as the Project Definition Report, Pre-Construction Operating Estimate, communication plan, risk assessment strategies, etc.

A Project Definition Report was prepared in support of this Business Case. The RPG Partnership coordinated its development, in consultation with users from NAHC and KBCHSS and with support from BCBC and HSG. The Project Definition Report is contained in a separate binder submitted with the Business Case. It includes the following materials:

- a 'program parameters' report which outlines and reviews the demand for services;
- a 'master program' which applies modern space standards to the program areas for all program components;
- a series of functional relationship diagrams that illustrates the relative adjacencies of major program areas; and
- program level capital cost estimates for the project.

Project Summary

The following table summarizes the main components of this project, including estimated time frame, capital and operating costs. The total project cost is based on a two - phased project and includes escalated costs to reflect the anticipated changes in costs over the course of the project.

Nelson Area Health Campus
Summary of Project Components

Project Component	Move In Date	Total Project Cost	Pre - Construction Operating Estimate
Phase 1 Multilevel Care Facility, including Adult Day Centre, Food Services and Physical Plant	2004	$16,788,000	$ 3,675,912
Phase 2 Acute Care Services and Community - Based Services	2006	$45,487,000	$31,920,125
[redacted]	[redacted]	[redacted]	[redacted]
Assisted - Living Housing	2004	$ 6,535,407	$ 2,145,965
Health Professionals Centre		$ 6,985,701	
[redacted]	[redacted]	[redacted]	[redacted]

The NAHC has requested capital and operating funds from the Ministry of Health for both the Acute Care and Multilevel Care facilities. Funds from non-governmental sources will be identified to cover the capital costs for development of the remaining components. Operating costs for the assisted - living units will be provided by the NAHC (for health services) and market rent paid by the tenants.

Needs Justification

THE HEALTH CAMPUS PROJECT IS CONSISTENT WITH STRATEGIC DIRECTIONS OF THE MINISTRY OF HEALTH, REGIONAL PLANS AND NAHC STRATEGIC DIRECTIONS

This project is consistent with Ministry of Health Goals:

- access to health care services within an acceptable time period (goal 2)
- access to health care services within specified geographic distances (goal 3)
- adequate supply of health care services (goal 4)
- high quality health services that improve health and health outcomes, and satisfy British Columbians' expectations (goal 6)

It is also supported by the priorities established for Continuing Care Renewal:

- ensure operating funding is sufficient to enhance community capacity, promote quality and support new and innovative service delivery models;
- ensure capital funding is sufficient to maintain, and upgrade, residential facilities and adult day centres;
- ensure each community has a range of flexible housing options, including supportive housing;
- foster local innovation in service delivery.

The Health Campus project supports the vision, mission, values and principles of the NAHC. The NAHC proposes to create a Health Campus that:

- provides a seamless continuum of care; and
- enables effective utilization of services and resources and eliminates duplication of services.

The Health Campus will be designed in a manner that is client focused, user friendly and contributes to the integration of services and maximum utilization of available equipment and manpower resources. Multi-faceted programs that focus on prevention, rehabilitation and maintenance of clients in their own homes, with appropriate supports, will be developed.

The Capital Plan for NAHC identifies replacement of the two main facilities as priority items.

DEMOGRAPHIC/POPULATION NEED SUPPORTS THE HEALTH CAMPUS

Many geographic/topographic factors affect the accessibility of health care services to the residents of the Nelson and Area Health Council:

- travel can be time-consuming and treacherous depending on weather and road conditions;
- public transportation is limited and many rural residents (particularly seniors) do not own or operate their own vehicles;
- the ferry is not a 24-hour service; there is no service between the hours of 1 a.m. and 6 a.m; there is often an extended wait in ferry line-ups during the summer or in the winter months when the Salmo-Creston Highway (the only alternate route) is closed;
- emergency air transport is another difficulty faced by area residents when Castlegar Airport is frequently closed due to inclement weather conditions, and planes do not depart or land at the airport after dark. Patients requiring "emergency" care must therefore be driven via ambulance to Kelowna, at least four hours away in good weather.

The area served by the Nelson and Area Health Council is located within the Central Kootenay Regional Census District. The following are key demographic indicators for the district.

- population density of 2.5 persons per square kilometre compared with 4.2 for the province as a whole;
- a majority (84.1%) with English as a mother tongue, followed by 5.6% with Russian as a mother tongue and smaller percentages with French, German and Italian;
- a generally lower level of educational attainment compared with the province as a whole;
- average employment and family income are significantly below provincial levels;

- in 1996, approximately 15% of the population of the area served by the Nelson and Area Health Council received BC Benefits and/or Unemployment Insurance. This fell to approximately 12.5% in 1997 and 11.2% in 1998;
- with respect to health status indicators, the area has significantly higher mortality rates for motor vehicle accidents, accidental falls and alcohol-related deaths.

POPULATION DEMOGRAPHICS SUPPORT THE HEALTH CAMPUS

The Nelson and Area Health Council serves a geographic area that extends from Boswell and Grey Creek to Salmo, to the Village of Slocan and north to Meadow Creek. It is the largest of the five Councils that comprise the West Kootenay Boundary Health Region. The population of the Council area numbered 29, 184 in 2000 and comprised 35.4% of the WKBHR.

- the population of NAHC is projected to rise to 40% of the WKBHR by 2015;
- NAHC is projected to be the fastest growing CHC in the WKBHR. The projected increase in population is 26% in the next 15 years. This rate of growth is unique in the WKBHR.
- the age distribution in NAHC is expected to shift by 2015, with decreases in the birth to 44 age groups and increases in the older age groups.

Programs and Services Included in the Health Campus

Programs and services have been projected based on the year 2015, since this will accommodate approximately 10 years of facility operation after a presumed opening of the multilevel care facility in 2004 and the acute care facility in 2006.

ACUTE CARE SERVICES

The Health Campus is being planned to include 60 acute care beds to serve the area's needs to 2015. When the facility is opened in 2006, 52 beds will be operational, with a gradual opening of additional beds as needed.

Specific changes in service delivery proposed for the Health Campus include:

- consolidating and enhancing community - based and outpatient services into a central, accessible location which will be more user-friendly and enhance staffing efficiencies;
- creating a separation between emergency and non-emergency/ambulatory care areas;
- enhancing services to divert hospital admission (e.g. quick response team, clinical decision unit, psychiatric assessment unit);
- expanding Day Care Surgery provided on an outpatient basis (some procedures such as gastroscopy and ophthalmology, presently housed in the Operating Room, will be re-located in the outpatient area);
- enhancing services to support early discharge (for example, stream - lining and improving communication between acute care and community - based services and continuing care).

The continuum of acute care services currently offered at KLRH will continue to respond to the health care needs of population groups served by the hospital (e.g. specific ethnic/cultural groups, the geriatric community, the chronically mentally ill, children and adolescents, etc.). The hospital will add a number of new programs to augment and enhance existing programs and to better rationalize service delivery on a regional basis and to reflect a 'closer to home' care philosophy while also maintaining strong inter-regional relationships with the other CHCs in the region to ensure timely and appropriate access to a full range of services.

Community - Based Services

In order to provide a seamless continuum of community - based services, the Nelson and Area Health Council and Kootenay Boundary Community Health Services Society will function in collaboration in the delivery of these programs and services from a single site on the Health Campus. Communication with the full range of care providers on the Campus will facilitate a more effective provision of patient, resident and client services.

Outpatient Care

The NAHC will greatly expand its role in outpatient care by offering a comprehensive array of outpatient/day programs, community and social services responding to existing and future new care programs. Existing services will be consolidated, a number of programs such as surgical day care, medical day care, diabetic day care, etc. will be expanded, and some new programs such as a metabolic education centre will be added.

Education

The NAHC will respond to the varied educational needs of patients, residents, clients, students and all health care workers. The Health Campus will host students from medical and nursing programs. Technical and professional trainees in the allied health disciplines will also be accommodated on-site for the practicum phase(s) of their curricula.

Research

Research projects will be conducted including epidemiological/statistical studies analyzing the incidence of health problems and patient population characteristics; program/outcome evaluation; and clinical trials testing new procedures or innovative programs.

CONTINUING CARE SERVICES

The Health Campus will provide an opportunity to co-locate and integrate a continuum of continuing care services to the people of NAHC. Acute care services for continuing care clients will continue to be provided through KLRH. Specifically, the Health Campus will include the following services for continuing care clients:

- a 86 bed multilevel care facility;
- an Adult Day Centre which will operate 5 days a week and has the capacity to provide services to up to 30 clients each day;
- a complex of assisted - living units - 60 are planned - which will be a new form of housing for frail seniors in the NAHC.

Continuing Care Renewal aims to shift the distribution of services so that individuals receive care in the community as much as is possible. This direction suggests enhanced community supports with the use of facility care for individuals who have more complex care needs. It is assumed that IC 1 and IC 2 residents will not be admitted to care facilities in the future, but instead, will be supported to live in the community with programs such as home care services, adult day care, respite care, etc. These individuals will also likely occupy assisted - living units.

Based on the projected service utilization for residential care and home support, the re-distribution of services has been calculated using the percentages inherent in the medium shift scenario. In addition to residential care and home support, there has been a shift to identify the potential demand for assisted - living.

Proposed Continuing Care Service Distribution 2005
Based on Medium Shift

Care Level	Projected Number of Clients			
	Residential Care	Home Support	Assisted - Living	Total
EC	150	18	9	177
IC 3	67.5	40.5	27	135
IC 2	28.5	171	85.5	285
IC 1		181		181
Total	**246**	**410.5**	**121.5**	**778**

Percent		
Residential Care	Home Support	Assisted - Living
85%	10%	5%
50%	30%	20%
10%	60%	30%
0	100%	0
36%	**50%**	**14%**

As part of the development of the Continuing Care Plan for the health authorities in the West Kootenays, there will need to be further consideration regarding the appropriateness of the proposed shift for this community.

Multilevel Care Facility

The multilevel care facility will be built to accommodate the following categories of residents:

- the ambulant with significant behavioural problems
- the non-ambulant with no significant behavioural problems
- the non-ambulant with significant behavioural problems

The multilevel care philosophy is based on 'ageing in place,' which will result in residents being allowed to remain in their chosen place when their care level alters. Defined programs and services will be provided within the multilevel facility, while others will be the responsibility of the resident and/or family. Residents will also be able to take advantage of services offered from the community.

Adult Day Centre

The Adult Day Centre will have space for 30 clients each day. It is estimated 20 would be from the population of frail elderly and 10 would be clients with moderate dementia. Individual clients would include adults living in the assisted - living housing on the health campus as well as others from the rest of the community. Separate programming for dementia care will be provided. About 25% of the clients are expected to be seniors with mental health problems, including social isolation and behavioral difficulties. In addition, the Congregate Meals Program allows non-eligible seniors and family members to join clients for the nutritious hot noon meal.

Assisted - Living

Applying the principles of Continuing Care Renewal to the NAHC scenario in 2005 suggests that there will be a demand for over 120 assisted - living units.

Assisted - living is based on a home care model, not a residential facility care model. The Nelson and Area Health Council defines assisted - living as:

> *"The provision of personal care and health services in a housing environment rather than a care environment. Assisted - living ensures coordinated health services and features individualized partnership agreements for service and risk management to maintain a high degree of tenant and family involvement and to encourage independence."*

Co-location of assisted - living on the Health Campus will provide an opportunity for couples or individuals who are faced with the challenges of ageing and/or maintaining their independence to have the opportunity to live independently in their own apartment while taking advantage of access to services provided at the site i.e. adult day care, meal service, respite care, podiatry, etc.

Tenants pay monthly rent in an amount similar to what they would pay if they were admitted to a conventional continuing care facility.

The tenant would be provided with the following:

- weekly housekeeping
- one meal per day (all meals can be provided for an additional fee)
- LIFELINE (personal emergency response system)
- 24/7 on site service by assisted - living staff
- recreational/social activities
- medication assistance, if needed, through the Home Care Nursing program
- other available programs and services

If professional support services were required, they would be provided to eligible tenants through the local Continuing Care program (home care nursing, community rehabilitation, mental health programs).

Health Professionals Centre

The Health Professionals Centre will offer space to health care practitioners where a variety of services and functions may occur. Initial discussion with community physicians indicates that there is interest in locating medical practices in this facility. Alternative health practitioners also see this as an opportunity to offer an array of services complimentary to the other Health Campus activities.

SITE CONSIDERATIONS

The major benefit of co - locating the acute and long term care programs is the efficient use of staff time and support services such as administration, food service, laundry, materiels, plant services, etc. Co-location would also ease the transfer from one level of care to another.

It is anticipated that the additional benefits will be realized with co -location, and will:

- eliminate travel time and vehicle operation costs between two sites;
- increase identification of employees with one organization;
- share cafeteria and food services with elimination of duplicate equipment;
- enhance ease of moving equipment within the site and sharing of some equipment;
- share and subsequently enrich rehabilitation services;
- eliminate cost of ambulance transfer between sites to the facility and/or the individual;

- further integrate social services;
- integrate health records and ease use via information systems, shared data base, elimination of duplication of information collection;
- centralize reception services and reduce duplication of services;
- amalgamate bargaining units and collective agreements creating an opportunity to restructure the work force that would not be possible on a site-specific basis, e.g. utilization of a clinical nurse specialist, dedicated volunteer coordinator, education coordinator;
- enhance opportunity to integrate service delivery in a seamless continuum.

PROGRAM LEVEL CAPITAL COST ESTIMATE

The current estimated capital cost of the project, based on the Master Program, is shown in the table. These figures assume that the project is competed in two phases (see implementation plan). Escalated project costs are shown.

Program Level Capital Cost Estimate

Item	Estimated Cost $
A. Land	-
B. Construction	$47,127,000
C. Professional Fees	$ 7,328,000
D. Furnishings & Equipment	$ 3,838,000
E. Municipal & Connection Fees	$ 1,225,000
F. Management & Overhead	$ 813,000
G. Project Contingency (2%)	$ 1,212,000
H. Payable Goods & Services Tax	$ 732,000
I. Total Project Cost	**$62,275,000**

The acute care hospital construction will be financed jointly by the Ministry of Health (60%) and by the West Kootenay Boundary Regional Hospital District (40%). The WKBRHD has given approval in principle to financing this project. However, once the final project costs have been established, the RHD will be asked to confirm the funding they will contribute to this project.
Capital funding for the Multilevel Care Facility will be requested from the Ministry of Health. Capital funding for the assisted - living units and the health professionals centre project will be explored with the private and non-profit sector.

The Pre-Construction Operating Estimate is shown in the following table.

Pre - Construction Operating Estimate

Projected Revenue	2004/05
Acute Care Services	23,840,121
Multilevel Care Services	4,638,940
Community - Based Services	3,286,746
Assisted - Living Housing	2,137,380
Total Projected Revenue	***$33,903,187***
Projected Expenditure	
Acute Care Services	$12,244,306
Multilevel Care Services	3,675,912
Community - Based Services	4,407,674
Corporate Services	5,593,577
Support Services	9,674,567
Assisted - Living Housing	2,145,965
Total Projected Expenditure	***$37,742,002***

PROJECT MANAGEMENT AND GOVERNANCE

The governance and project management structure will be established to ensure the project is delivered on time, within the budget and with an uncompromised level of quality. The proposed project management controls and structures will be consistent with the capital plan requirements of the Ministry of Health and the capital project requirements of the Ministry of Finance and Corporate Relations. A Project Steering Committee will have overall responsibility for the delivery of the project. A Project Team will be responsible for completing the tasks associated with the project.

Specific project control processes that will be established as part of the overall project management include.

- management and financial controls related to monitoring construction cost or managing cost overrun;
- quality control e.g. value analysis process, ongoing management of materials and workmanship, ensure that any deficiencies are dealt with in an expedient way;
- contract management e.g. processes for reviewing and signing contracts, receiving contracted service, assigning responsibility for co-ordinating service contracts, and for maintaining the quality of contracted services;
- a well-defined and effective issues management process e.g. risk identification and monitoring for escalation, conflict management, risk mitigation strategies such as obtaining insurance, contracts and taking corrective action by revising scopes as required and other remedies;
- management of change;
- internal project communications and reporting;
- independent monitoring process and evaluation; and
- specified performance measures.

IMPLEMENTATION PLAN

Replacing Kootenay Lake Regional Hospital at a separate, new site allows the present site to continue to operate until the new site is completed. Once completed, the patients can be relocated from the old to the new site. It is estimated that the construction period would be in the order of three to five years.

The new multilevel care facility will be constructed prior to demolishing the existing Mount St. Francis Hospital. This would avoid the housing of residents in another building during the construction phase. The proposed redevelopment would include the building of a completely new building at an alternate location on the site. This would be preferred, as it would cause the least disruption to the resident population who could remain at the current site until such time as the new structure is complete. The same would apply to Kootenay Lake Regional Hospital.

At the same time as the construction of the multilevel care facility, necessary support services such as food serves and plant will be built. The construction of the acute care facility would occur after the multilevel care facility has been constructed and the existing Mount St. Francis Hospital building is demolished.

Implementation Plan

Task Name	Start Date	Completion Date
Approved to Proceed	March 7, 2001	March 7, 2001
Detailed Master Program	March 8, 2001	May 30, 2001
Appoint Consultants	May 31, 2001	June 13, 2001
Project Brief	June 14, 2001	December 26, 2001
Project Approvals	December 27, 2001	February 20, 2002
Working Drawings Phase 1	February 21, 2001	August 7, 2002
Working Drawing Approvals	August 8, 2002	September 4, 2002
Tender Award Phase 1 MLC & Food Services	September 5, 2002	October 16, 2002
Working Drawing Phase 2	October 17, 2002	May 14, 2003
Working Drawing Approvals	May 15, 2003	May 28, 2003
Complete Lease for Assisted - Living Units	September 5, 2002	October 16, 2002
Substantial Performance Phase 1	October 17, 2002	December 10, 2003
Commission MLC & Assisted - Living Units	December 11, 2003	January 7, 2004
Move in MLC & Assisted - Living Units	January 8, 2004	January 21, 2004
Demolish Existing Mount St. Francis Hospital	January 22, 2004	February 4, 2004
Tender & Award Phase 2 Acute Care Hospital	February 5, 2004	March 31, 2004
Substantial Performance Acute Care Hospital	April 1, 2004	March 29, 2006
Commission Acute Care Hospital	March 30, 2006	May 24, 2006
Move In Acute Care Hospital	May 25, 2006	June 7, 2006

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1.0 INTRODUCTION

For the last decade, the Nelson and Area Health Council (and the governance organizations which preceded it) and the Ministry of Health have been discussing the replacement of two key health care institutions in Nelson – Kootenay Lake Regional Hospital (KLRH) and the Mount Saint Francis Hospital (MSF). These discussions, and the assessments, studies and analysis that have been produced, have reached the stage where a decision to proceed is required. In July 2000, the Nelson and Area Health Council submitted a Capital Project Request to the Ministry of Health for capital funding for replacement of the two facilities. However, the vision of the NAHC goes beyond replacement of the existing facilities. Rather the vision of the Health Council is to create a Health Campus to bring a whole range of health services together on one site to increase the options available to health care consumers. The creation of a Health Campus in a rural community will offer opportunities to model innovative approaches to delivery of acute care, community-based and continuing care services.

In addition to offering acute care services with an increased emphasis on ambulatory rather than inpatient care, the Campus will provide an integrated approach to the delivery of community - based services (preventive, mental health services and continuing care services). The Campus will offer an array of services for seniors including a multilevel care facility with an expanded adult day care centre and combined housing and care services for the frail elderly. In addition, the Health Campus has the capacity to house other services such as a health professional centre and an Ambulance Station.

The NAHC objectives for the Health Campus Project include:

- provide an appropriate and safe environment for the delivery of care;
- provide an environment supportive to integration of services, seamless continuum of care, improving efficiencies, and effectiveness in the delivery of care.

This Business Case has been prepared in support of the development of the Health Campus. It includes information that expands upon the Capital Project Request previously submitted and provides the supporting documentation requested by the Ministry of Health and the Ministry of Finance and Corporate Relations.[1]

1.1 Background To The Project

During the last decade, numerous studies and evaluations related to acute and long term care capacity and facilities in the NAHC and West Kootenay Boundary Region have been undertaken (see Appendix A). These projects included master plans, physical and functional assessments of facilities, evaluation of site options, community needs assessment, etc. In 1999, NAHC undertook to substantially update and consolidate this work with the completion of a Service Analysis, a Community Needs Assessment, updated Facilities Status Reports, a preliminary Redevelopment Plan and Master Plan and a Site Feasibility Study.

As a result of the studies completed in 2000, the NAHC concluded that the interests of health care consumers would best be served by replacing the two main health care facilities in Nelson. These conclusions were reached based on the following factors:

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[1] Ministry of Finance and Corporate Relations. Capital Project Business Case. Undated.

- there are not enough acute care beds to meet the needs of an expanding population, which increases staff workload, makes poor use of staff resources and causes considerable overtime costs to address overflow conditions;
- the lack of appropriate space prohibits the development of alternative programs that might reduce acute care bed utilization (surgical day care, ambulatory programs, etc);
- inadequate facilities to support patient care affect the morale of patients and staff and may have had a negative impact on recruitment of medical and other staff;
- money is being spent to address urgent safety issues to keep a decrepit facility operating when the funds are needed to support direct patient care;
- the way health care is delivered has changed since the existing facilities were built. Consumers want choices that may include admission to a care facility when necessary. However, more emphasis is now placed on providing an array of services to suit differing needs and local conditions as well as services closer to home.

In conclusion, the NAHC believes that it is significantly hindered in its ability to achieve its vision for health care in Nelson due to the decrepit condition of the KLRH and Mount St. Francis Hospital. It is no longer prudent to divert scarce capital and operating dollars to address physical and functional deficiencies in these facilities when resources are required to further the strategic directions of the NAHC. The NAHC believes that creation of the Health Campus will provide the necessary access to quality patient care to the residents of Nelson and area as well as to consumers in adjoining health areas who wish to receive health care closer to their home.

1.2 Business Case Development

This section describes the process used to develop the Business Case.

1.2.1 Steering Committee and Project Team

A Steering Committee was struck in October, 2000, to guide the development of the Business Case. The terms of reference and membership of the Steering Committee can be found in Appendix B. The Health Services Group (HSG) was engaged to assist the Nelson Area Health Council with the development of the Business Case.

A Project Team was formed to prepare the Business Case. Core team members included representatives from NAHC, Kootenay Boundary Community Health Services Society (KBCHSS), The RPG Partnership (RPG), BC Buildings Corporation (BCBC) and HSG. The Project Team was responsible for developing specific project materials such as the Project Definition Report, Pre-Construction Operating Estimate, communication plan, risk assessment strategies, etc.

1.2.2 Developing the Project Definition Report

A Project Definition Report was prepared in support of this Business Case. The RPG Partnership coordinated its development, in consultation with users from NAHC and KBCHSS and with support from BCBC and HSG.

The Project Definition Report includes the following materials:

- a 'program parameters' report which outlines and reviews the demand for services;
- a 'master program' which applies modern space standards to the program areas for all program components;
- a series of functional relationship diagrams that illustrates the relative adjacencies of major program areas; and
- program level capital cost estimates for the project.

1.3 Summary of Project

The following table summarizes the main components of this project, including estimated time frame, capital and operating costs. The total project cost is based on a two - phased project and includes escalated costs to reflect the anticipated changes in costs over the course of the project.

Exhibit 1

Nelson Area Health Campus
Summary of Project Components

Project Component	Move In Date	Total Project Cost	Pre - Construction Operating Estimate
Phase 1 Multilevel Care Facility, including Adult Day Centre, Food Services and Physical Plant	2004	$16,788,000	$ 3,675,912
Phase 2 Acute Care Services and Community - Based Services	2006	$45,487,000	$31,920,125
[redacted]	[redacted]	[redacted]	[redacted]
Assisted - Living Housing	2004	$ 6,535,407	$ 2,145,965
Health Professionals Centre		$ 6,985,701	
[redacted]	[redacted]	[redacted]	[redacted]

The NAHC has requested capital and operating funds from the Ministry of Health for both the Acute Care and Multilevel Care facilities. Funds from non-governmental sources will be identified to cover the capital costs for development of the remaining components. Operating costs for the assisted - living units will be provided by the NAHC (for health services) and market rent paid by the tenants.

1.4 Organization of This Document

The material included in this document addresses the requirements for Capital Project Funding required by the Ministry of Finance and Corporate Relations. In addition, the Ministry of Health requirements for capital plans and continuing care renewal plans were considered in preparing this document. The organization of the Business Case is shown in the following table.

Introduction	This section describes the objectives, scope and history of the project. It also includes a summary of the time frame, estimated capital and pre - construction operating costs for all components of the project.
Nelson Health Campus	This section briefly describes the main components of the proposed Health Campus.
Needs Justification	The need for the project is addressed from the perspective of consistency with the strategic direction of the Ministry of Health and NAHC and population health need.
Acute Care Services	The acute care services component including outpatient services is described in terms of the services to be offered, projected workload, proposed staffing and space requirements.
Community - Based Services	These services are briefly described.
Continuing Care Services	Continuing care services including the multilevel care facility and adult day centre are described in terms of the services to be offered, projected workload, proposed staffing and space requirements.
Health Professionals Centre	Potential services to be offered in the Health Professionals Centre are described.
Site Considerations	Site considerations are described.
Estimated Cost	This section includes financial and non-financial expected outcomes and costs.
Project Management and Governance	This section describes the proposed structure that will be created to manage this project once approvals are received. Terms of reference for key project groups are proposed. Potential project risks have been identified and a plan for managing them is presented. Preliminary performance indicators that will be used to measure project success have also been proposed. Key elements of a communications plan have also been proposed.
Implementation Plan	Outlines the proposed approach to the project and provides an overview of the implementation plan and timelines for the project.
Appendices	Provides additional information supporting the Business Case.

2.0 THE NAHC HEALTH CAMPUS

The NAHC Health Campus represents a major new innovation in rural health care delivery. The goal for the Health Campus is to increase options available to health care consumers by bringing services together on a shared site and incorporating innovative approaches to acute, community - based and continuing care. The campus model is intended to shift the focus of from 'health care' to 'wellness'. The campus model allows for expansion over time or renewal of buildings to meet future needs. Outdoor gardens and green space are essential to providing a healing environment for visitors, patients, and staff and are considered an integral part of the plan as well as an asset of the proposed site.

2.1 Major Concepts

The Health Campus concept is an exciting change in approach to health. As the health care system continues to be pressured by increasing demands and decreasing human and financial resources, innovative changes must address these challenges. The Health Campus is a realistic and feasible solution. It incorporates community partners in the development of all components. It has broad community support. It is in keeping with what seniors and families have been requesting. Most importantly, the Health Campus offers support and education to the individual consumer in making informed choices for better health and wellness that will positively impact society as a whole. Several major planning concepts are integral to the development of the health campus concept.

2.1.1 Wellness Focus

The 'wellness' focus inherent in the Health Campus model shifts the emphasis from 'receiving care' to 'individual wellness.' With this shift, a prevention focus evolves and moves away from the traditional model of 'cure or care.' Also, the word 'campus' implies learning and education, which offers the individual options in maintaining health and support towards that goal. As the 'health care' traditional model shifts to the 'wellness' model, citizens will individually expect to hold greater responsibility in care decisions, which should positively impact health.

2.1.2 Shared Location of Services

Offering health services in the same location supports service integration and stream - lining of service delivery as well as cost savings. This project goes far beyond the need to replace the ageing facilities in Nelson. It fosters the redesign of services and program structure to better meet clients' needs. It incorporates the principles of Continuing Care Renewal to better meet the needs of the ageing population. In keeping with new provincial directions, the campus project incorporates a shift towards an enhanced range of community support options for clients and caregivers. The Health Campus will allow consumers a 'front and centre' approach in choosing wellness options.

The model closely unites residential care, assisted - living housing and support, adult day programs, home support, primary care, outreach services and acute primary and secondary level care. By co-locating housing and care beds, continuing care clients could expect to live in a community setting as long as possible, increasing the ability to "age - in - place" rather than moving because the desired care options aren't available on site. Also, the physical connection will improve access to services and stream - line support services, creating efficiencies and savings.

2.1.3 Emphasis on Community-Based Services

The Health Campus approach is intended to alleviate pressures on acute care services through building the community support programs that prevent admission and facilitate early discharge. These same programs can substitute or delay admission to residential care, making the best use of limited health care dollars.

2.1.4 Alternative and Traditional Practitioners

Wellness and health promotion are a primary focus for the Health Campus. An array of alternative and traditional health care practitioners will be housed on the site. Also, activities focusing on prevention and health education will be encouraged and promoted.

2.2 Health Campus Components

The main components planned within the Health Campus include:

- Acute Care Services and Community - Based Services
- Continuing Care Services
  - Multilevel Care Facility, including Adult Day Centre
  - Assisted - Living Housing
- space for a Health Professionals Centre
- space for a future Ambulance Station

The Health Campus will be developed on land adjacent to the existing Mount Saint Frances Hospital owned by NAHC. The project will be phased so that a new multilevel care facility and assisted - living units will be built, the existing Mount Saint Francis Hospital demolished, and then construction of the new acute care facility will occur. The plan also calls for disposal of the existing KLRH site.

- **Acute Care Services**

Construction of a new 60 bed acute care facility to replace the 45 beds currently located in the functionally obsolete Kootenay Lake Regional Hospital adding 15 new beds to assist the NAHC to meet current and future demands for acute care. The proposed bed allocation would allow the Health Council to meet current and future demands to the year 2015.

A key component that supplements the acute care facility is consolidation on-site of existing community - based services presently offered by NAHC and KBCHSS. These services include home support, transportation, community education, mental health, continuing care and community health. In addition to co-location of staff that deliver these services, the services will be provided using the clinic and education space in the outpatient area of the Campus. The creation of a joint KBCHSS/NAHC focus for community - based services will enhance the synergy between the two organizations and provide opportunities to strengthen the continuum of services to clients.

- **Continuing Care Services**
  - **Multilevel Care Facility**

Construction of a new 86 - bed multilevel care facility to replace the 79 residential care beds currently located in the functionally obsolete Mount St. Francis Hospital adding 7 new beds to assist the NAHC to meet current and future demands for residential care. The proposed bed allocation would allow the NAHC to develop a state - of - the - art care facility designed for extended care and intermediate care 3 residents in a home like, normalized environment. Twenty bed pods would be designed to meet the needs of specific client groups including palliative care/end stage dementia; transitional care unit focussing on rehab/respite; frail elderly; enhanced special care unit for residents that present behavioural challenges, moderate and severe dementia.

- **Adult Day Centre**

The Adult Day Centre will have space for 30 clients each day. It is estimated 20 would be from the population of frail elderly and 10 would be clients with moderate dementia. Participants in the Adult Day Centre could include frail seniors living in the assisted - living housing on the health campus as well as others from the community. Separate programming for dementia care will be provided. About 25% of the clients are expected to be seniors with mental health problems, including social isolation and behavioral difficulties. In addition, a Congregate Meals Program allows non-eligible seniors and family members to join clients for the nutritious hot noon meal.

- **Assisted - Living Housing**

The Health Council proposes the development of assisted - living units that will provide combined care and housing for the frail elderly. The intent of the co-location of the housing unit on the site is to provide individuals with significant health related problems an opportunity to age - in - place in a secure, barrier free environment with access to supportive services such as meal service, health care, etc., when required.

☐ **Health Professionals Centre**

Currently space is allocated at Kootenay Lake Regional Hospital for the use of specialists such as internists, surgeons, pediatrician, visiting consultants and respirologist. Separate clinic facilities on or near the new facility will provide the required space but at less cost than providing the equivalent space in the new acute care facility. Initial indications support the inclusion of space for health practitioners, office space for educational activities, as well as temporary hostel style accommodation for visiting medical personnel and for families of patients at Kootenay Lake Regional Hospital. A "main street" concept for hair dressing services, a tuck shop, coffee bar, etc., could also be considered. This location would be attractive to alternative health care practitioners.

3.0 NEEDS JUSTIFICATION

This section provides information to support the demand for this project.

3.1 Consistent With Strategic Directions

This section presents support for this project based on the fit with the strategic initiatives of the Ministry of Health, the Nelson and Area Health Council and the West Kootenay Boundary Health Region.

3.1.1 Ministry of Health Goals

The completion of this project will allow the NAHC to more effectively meet the strategic goals as identified by the Ministry of Health, specifically:

- access to health care services within an acceptable time period (goal 2)
- access to health care services within specified geographic distances (goal 3)
- adequate supply of health care services (goal 4)
- high quality health services that improve health and health outcomes, and satisfy British Columbians' expectations (goal 6)

3.1.2 Continuing Care Renewal

In 1999, the Ministry of Health completed a review of continuing care services. There are a number of priorities for action identified in the final report which apply to this project.

Exhibit 2

Ministry of Health
Priorities For Action – Continuing Care Review

Number	Priority For Action
1.4	Ensure operating funding is sufficient to enhance community capacity, promote quality and support new and innovative service delivery models.
1.5	Ensure capital funding is sufficient to maintain, and upgrade, residential facilities and adult day centres.
2.4	Ensure each community has a range of flexible housing options, including supportive housing.
3.4	Foster local innovation in service delivery.

3.1.3 Nelson Area Health Council Strategic Direction

The NAHC has articulated its vision, mission, values and principles (Appendix C). The goals of the NAHC are:

- Better health
- Effective and efficient management
- Public participation and responsibility
- Health care closer to home
- Barrier-free service delivery
- Equitable service delivery
- Holistic health
- Regional cooperation
- Preservation and protection of the health care system

The strategic direction related to the development of the Health Campus is to:

- provide a seamless continuum of care; and
- enable effective utilization of services and resources and eliminates duplication of services.

Space will be designed in a manner that is client focused, user friendly and contributes to the integration of services and maximum utilization of available equipment and manpower resources. Multi-faceted programs that focus on prevention, rehabilitation and maintenance of clients in their own homes, with appropriate supports, will be developed.

3.1.4 NAHC Capital Plan

The Capital Plan for NAHC identifies replacement of the two main facilities as a priority.

3.1.5 Relationship To West Kootenay Health Plan

The West Kootenay Health Plan identified eight priority issues to be addressed in the three years from 2000 to 2003. These include:

Health Issues	Health System Issues
Poverty	Structure of the System
Ageing Population	Continuum of Health Services
Addiction and Substance Abuse	Geography and Dispersed Rural Population
Preventable Injuries	Human Resources

Goal #2 is specific to seniors: "to assess and respond to the health needs of seniors, within available resources".

Specific objectives include:

- to provide coordinated wellness services for seniors;
- to provide seniors with a continuum of essential client-focused health services and supports;
- to support seniors' choice to live independently.

In addition, the Health Plan includes strategies to decrease the incidence of motor vehicle accidents as well as injuries and death due to falls among the elderly. The Plan specifically refers to increasing options for assisted - living. Another objective is related to ensuring adequacy of facilities and equipment to provide quality health services.

3.2 Demographic/Population Need

The anticipated changes in demographic/population need that support the changing services included in the Health Campus are documented in this section. More information about the need for individual services is included under the relevant descriptive section later in this document.

3.2.1 Health Status Indicators

The area served by the Nelson and Area Health Council is geographically situated in the West Kootenay Region of British Columbia, in the Selkirk and Purcell mountain ranges and on the shores of Kootenay Lake. The mountains and the lake influence the area's weather. It receives annual precipitation of 533.2 mm. Average snowfall for the year is 224.6 cm, and the daily mean temperature is 8.3 celsius.

Many geographic/topographic factors affect the accessibility of health care services to the residents of the Nelson and Area Health Council. Travel to medical appointments and health care facilities can be time-consuming and treacherous depending on weather and road conditions, and mortality rates due to motor vehicle accidents continue to be significantly higher than provincial averages[2]. Public transportation is limited and many rural residents (particularly seniors) do not own or operate their own vehicles. East Shore residents face the added challenge of ferry travel, and wait for extended periods of time in ferry line-ups during the summer or in the winter months when the Salmo-Creston Highway (the only alternate route) is closed. The ferry is not a 24-hour service, and there is no service between the hours of 1 a.m. and 6 a.m.

Emergency air transport is another difficulty faced by area residents. Castlegar Airport is frequently closed due to inclement weather conditions, and planes do not depart or land at the airport after dark. Patients requiring "emergency" care must therefore be driven via ambulance to Kelowna, at least four hours away in good weather.

The area economy centres on traditional resource-based industries, with forestry and mining playing key roles in shaping the community. Tourism is also a major industry in the area, with many outdoor recreation activities to explore.
The area served by the Nelson and Area Health Council is located within the Central Kootenay Regional Census District. The following are key demographic indicators for the district.

- population density of 2.5 persons per square kilometre compared with 4.2 for the province as a whole;
- a majority (84.1%) with English as a mother tongue, followed by 5.6% with Russian as a mother tongue and smaller percentages with French, German and Italian;
- a generally lower level of educational attainment compared with the province as a whole;
- average employment income is $22,812. An average family income is $46,507 - significantly below provincial levels, which are $27,480 and $56,527 respectively;

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[2] BC Vital Statistics Agency. Annual Report. 1997.

- in 1996, approximately 15% of the population of the area served by the Nelson and Area Health Council received BC Benefits and/or Unemployment Insurance. This fell to approximately 12.5% in 1997 and 11.2% in 1998.
- with respect to health status indicators, there is little significant variance from provincial averages - however, the area does have significantly higher mortality rates for motor vehicle accidents, accidental falls and alcohol-related deaths.

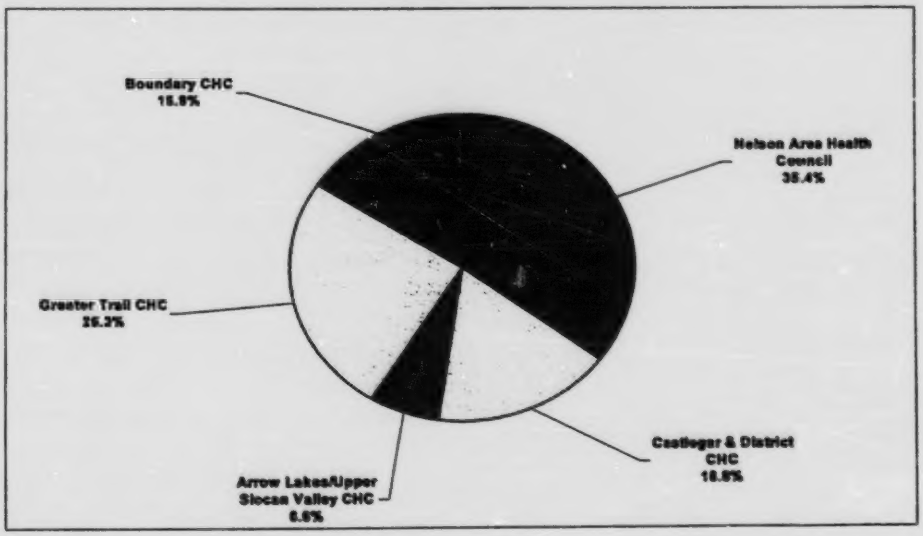
3.2.2 Population Demographics

This section provides information about the characteristics of the population served by the Nelson Area Health Council. The distribution of the current population and the expected growth to 2015 is highlighted.[3]

The Nelson and Area Health Council serves a geographic area that extends from Boswell and Grey Creek to Salmo, to the Village of Slocan and north to Meadow Creek. It is the largest of the five Councils that comprise the West Kootenay Boundary Health Region. The population of the Council area numbered 29, 184 in 2000 and comprised 35.4% of the WKBHR.

Exhibit 3

West Kootenay Boundary Health Region
Population Distribution 2000



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[3] The population data used in this report was obtained from the following source: BC Ministry of Health "Population Extrapolation for Organizational Planning with Less Error". Version 25 (PEOPLE 25) 2000.

The population of NAHC is projected to rise to 40% of the WKBHR by 2015.

Exhibit 4

Population of the CHCs of the WKBHR 2000 & 2015

CHC	2000		2015	
	Population	% of WKBHR	Population	% of WKBHR
Nelson & Area Health Council	29,313	35%	37,073	40%
Arrow Lakes/Upper Slocan Valley CHC	5,397	7%	5,809	6%
Boundary CHC	13,227	16%	14,527	16%
Castlegar & District CHC	13,892	17%	14,471	16%
Greater Trail CHC	20.929	25%	21,359	23%
Total	82,758	100%	93,239	100%

NAHC is projected to be the fastest growing CHC in the WKBHR. The projected increase in population is 26% in the next 15 years. This rate of growth is unique in the WKBHR.

Exhibit 5

Projected Population Growth - Percent CHCs of the WKBHR 2000 - 2015

	Population Growth			
	2000 - 2005	2005 - 2010	2010 - 2015	2000 - 2015
Nelson & Area Health Council	6%	10%	9%	26%
Arrow Lakes/Upper Slocan Valley CHC	2%	3%	2%	8%
Boundary CHC	3%	3%	3%	10%
Castlegar & District CHC	2%	1%	1%	4%
Greater Trail CHC	1%	0%	1%	2%
Total	3%	5%	4%	13%

3.2.3 WKBHR Age Distribution

The age distribution of all the CHCs of the WKBHR and BC is similar.

Exhibit 6

Age Distribution WKBHR - 2000

	Age Group				
	0 - 14	**15 - 44**	**45 - 64**	**65 - 74**	**75+**
Nelson & Area Health Council	17%	42%	27%	7%	6%
Arrow Lakes/Upper Slocan Valley CHC	18%	43%	26%	7%	6%
Boundary CHC	18%	38%	29%	9%	7%
Castlegar & District CHC	17%	40%	26%	9%	9%
Greater Trail CHC	16%	37%	28%	11%	7%
Total WKBHR	17%	41%	27%	8%	7%
BC	18%	45%	24%	7%	6%

The age distribution in NAHC is expected to shift by 2015, with decreases in the birth to 44 age groups and increases in the older age groups.

Exhibit 7

Nelson Area Health Council
Percent Age Distribution 2000 - 2015

	Age Group				
Year	**0 - 14**	**15 - 44**	**45 - 64**	**65 - 74**	**75+**
2000	17.3%	42.1%	27.4%	7.2%	6.0%
2005	15.4%	39.5%	31.1%	7.4%	6.6%
2010	15.2%	37.9%	32.5%	7.9%	6.5%
2015	15.5%	36.9%	31.1%	10.1%	6.4%

4.0 ACUTE CARE SERVICES

On the Health Campus, Acute Care Services have been defined to include services provided on an inpatient and outpatient basis within the acute care component as described in the Project Definition Report.

The focus for Acute Care services is changing to encourage citizens to involve themselves in health decisions through the use of alternate options and community - based services. Within the Health Campus complex, the vision of 'wellness and health' will replace that of 'illness and cure.' Inherent in this changing approach is a belief in empowering individuals with knowledge and options for better health. The focus of acute care service delivery will shift to encourage citizens to maintain and improve health.

Specific changes in service delivery proposed for the Health Campus include:

- consolidating and enhancing community - based and outpatient services into a central, accessible location which will be more user-friendly and enhance staffing efficiencies;
- creating an appropriate environment that separates emergency from non-emergency/ambulatory care;
- enhancing services to divert hospital admission (e.g. quick response team, clinical decision unit, psychiatric assessment unit);
- expanding Day Care Surgery provided on an outpatient basis (some procedures such as gastroscopy and ophthalmology, presently housed in the Operating Room, will be re-located in the outpatient area);
- enhancing services to support early discharge (for example, stream - lining and improving communication between acute care and community - based services and continuing care).

4.1 Description of Services

The following components will be provided on the Health Campus as part of the Acute Care Services:

- Acute inpatient care
- Community - based services
- Outpatient care
- Education
- Research

Each of these components is described in detail in the Project Definition Report, Section One: Program Parameters. A brief synopsis of each component is provided below.

Acute Care Services

Acute Care Services will continue to provide services currently offered at Kootenay Lake Regional Hospital (KLRH). The continuum of services will continue to respond to the health care needs of population groups served by the hospital (e.g. specific ethnic/cultural groups, the geriatric community, the chronically mentally ill, children and adolescents, etc.). The hospital will add a number of new programs to augment and enhance existing programs; to better rationalize service delivery on a regional basis; and to reflect a 'closer to home' care philosophy while also maintaining strong inter-regional relationships with the other CHCs in the region to ensure timely and appropriate access to a full range of services.

Community - Based Services

In order to provide a seamless continuum of community - based services, the Nelson and Area Health Council and Kootenay Boundary Community Health Services Society will function in collaboration in the delivery of these programs and services from a single site on the Health Campus. Communication with the full range of care providers on he Campus will facilitate a more effective provision of patient, resident and client services.

Outpatient Care

The NAHC will greatly expand its role in outpatient care by offering a comprehensive array of outpatient/day programs, community and social services responding to existing and future new care programs. These services will consolidate those services currently fragmented, expand a number of existing programs such as surgical day care, medical day care, diabetic day care, etc., and enhance with some new programs such as a metabolic education centre.

Education

The NAHC will respond to the varied educational needs of patients, residents, clients, students and all health care workers. The Health Campus will host students from medical and nursing programs. Technical and professional trainees in the allied health disciplines will also be accommodated on-site for the practicum phase(s) of their curricula.

Research

Strong beliefs in the advancement of knowledge, aspirations to continually improve care practices, outcomes and overall health standards, and ready access to patients, residents, clients and comprehensive data bases promote support for the following types of research projects:

- epidemiological/statistical studies analyzing the incidence of health problems and patient population characteristics;
- program/outcome evaluation;
- clinical trials testing new procedures or innovative programs.

4.2 Demand for Acute Care Services

The Health Campus proposes to increase the number of acute care beds to reflect the estimated increase in area population by 2015 as well as changing utilization patterns. In addition, the introduction of assisted - living and other community support services is expected to stabilize or reduce the overall demand for acute care beds.

4.2.1 Acute Care Utilization by CHC residents

The residents of NAHC experienced 47,468 days of care in a hospital setting in 1998/99, regardless of location. Acute care accounted for 42 percent of days, while Rehab care accounted for 1 percent of days and ALC accounted for 2 percent of days. The majority of hospital days (54%) were for facility (Extended Care) residents.

Extensive utilization information is provided in the Project Definition Report that accompanies the Business Case. This section highlights changes in acute care utilization from 1994/95 to 1998/99.

Highlights include:

- an 8 percent drop in the number of days of acute care for residents of NAHC;
- a doubling in the number of rehab days;
- a 5000% increase in the number of ALC days (note: the use of the ALC designation was being implemented over the five years. The large increases in ALC utilization are therefore a result of implementation issues.)
- the number of cases for acute care dropped slightly;
- the number of ALC cases increased by over 2000 percent;
- surgical day care cases numbered 2,136 in 1998-99, which was a 9 percent increase over 1994-95;
- the average length of stay for acute care was 5.1 days in 1998/99, which was a 6 percent decrease from 1994/95.

4.2.2 Location of Acute Care Utilization by NAHC Residents

The previous section summarized all care for NAHC residents regardless of location. The care received by NAHC residents in hospitals identified by the name of the hospital is shown below:

- In 1998/99, 59% of the days of acute care for residents of NAHC were delivered at Kootenay Lake District Hospital, a drop of 3% from 1994/95. Trail Regional Hospital accounted for 19% of the days of acute care for NAHC residents in 1998/99.
- Rehabilitation care for residents of NAHC has been delivered entirely in the Lower Mainland or out of province.
- Days of ALC care for residents of NAHC were delivered primarily at Kootenay Lake District Hospital in 1998/99. The percentages delivered in various locations in previous years are highly variable; likely due to the very small number of persons cared for at the ALC level.
- About 60% of the surgical day care cases for NAHC residents is delivered at the Kootenay Lake District Hospital, 19% at Trail Regional Hospital and 11% in the Lower Mainland at the COUTH (Council of University Teaching Hospitals) facilities.

4.2.3 KLRH - Source of Patients

The Kootenay Lake Regional Hospital provided 13,483 days of acute care in 1998/99, an 8% drop since 1994/95. Residents of Nelson and Area CHC were provided with 12,088 days of acute care in 1998/99 at KLRH, a drop of 5% since 1994/95.

The percentage breakdown of days of care provided at KLRH by CHC of residence indicate that the percentages have been relatively stable over the 5 years, with NAHC accounting for about 85% of days of care, Arrow Lakes/Upper Slocan Valley accounting for about 5% and Castlegar and District accounting for about 6%.

The drop in days of care is mirrored in the number of cases of care provided at KLRH, though the decline in cases since 1994/95 is less than the drop in days of care. This is explained by the drop in average length of stay (ALOS) which is 4.6 days, a drop of 3% since 1994/95.

4.2.4 Acute Care Utilization Rates Peer CHCs

NAHC age-adjusted hospital utilization rates for days of care compared to peer CHCs are shown below. The first half of the table has the actual age-adjusted utilization rates. In order to better compare the various rates to the BC average, the second part of the table expresses the rates as a percent of the BC rate.

ALC days utilization rate for NAHC residents is about half the provincial rate and seven times less than the highest rate for Campbell River/Nootka CHC.

Exhibit 8

Age Adjusted Utilization of Hospital Days, NAHC & Peers, 1998-99

DAYS

Peer CHC		Acute	ALC	Rehab
Age adjusted rate				
6	Nelson & Area CHC	687	34	22
16	Sunshine Coast CHC	603	38	14
18	Sea to Sky CHC	642	44	12
20	Campbell River/Nootka CHC	602	245	18
24	North Peace CHC	741	168	9
28	Terrace & Area CHC	725	98	18
	British Columbia	575	66	14
As percent of BC rate				
6	Nelson & Area CHC	119%	51%	156%
16	Sunshine Coast CHC	105%	58%	100%
18	Sea to Sky CHC	112%	66%	88%
20	Campbell River/Nootka CHC	105%	369%	126%
24	North Peace CHC	129%	254%	63%
28	Terrace & Area	126%	148%	130%
	British Columbia	100%	100%	100%

The table below presents the age-adjusted utilization rate of hospital cases, by level of care. NAHC has an age-adjusted rate of acute care cases that is 39% higher than the BC average and is the highest of all peer CHCs. The rate of ALC utilization and rehab utilization is among the lowest of the peers.

Exhibit 9

Age Adjusted Utilization of Hospital Cases, NAHC & Peers, 1998-99

Peer CHC		Acute	ALC	Rehab	SDC
Age adjusted rate					
C06	Nelson & Area CHC	136.0	2.2	0.2	0.2
C16	Sunshine Coast CHC	107.1	2.0	0.4	0.4
C18	Sea to Sky CHC	115.2	2.5	0.4	0.4
C20	Campbell River/Nootka CHC	109.9	3.6	0.5	0.5
C24	North Peace CHC	126.2	3.1	0.2	0.2
C28	Terrace & Area CHC	120.2	2.2	0.4	0.4
	British Columbia	97.5	2.6	0.3	0.3
As percent of BC rate					
6	Nelson & Area CHC	139%	84%	66%	119%
16	Sunshine Coast CHC	110%	77%	139%	87%
18	Sea to Sky CHC	118%	98%	133%	91%
20	Campbell River/Nootka CHC	113%	139%	148%	119%
24	North Peace CHC	129%	118%	80%	91%
28	Terrace & Area CHC	123%	85%	118%	118%
	British Columbia	100%	100%	100%	100%

4.2.5 West Kootenay Boundary Health Region CHCs 1988/99

NAHC age-adjusted hospital utilization rates for days of care compared to West Kootenay Boundary Health Region CHCs are shown below. The first half of the table has the actual age-adjusted utilization rates. In order to better compare the various rates to the BC average, the second part of the table expresses the rates as a percent of the BC rate.

Arrow Lakes/Upper Slocan Valley CHC stands out as having relatively high rates of acute care and ALC utilization. Boundary CHC has relatively low rates of acute care, ALC and rehab care.

Exhibit 10

Age Adjusted Utilization of Hospital Days
WKBHR CHCs, 1998-99

Peer CHC		Acute	ALC	Rehab
Age adjusted rate				
6	Nelson & Area CHC	687	34	22
7	Castlegar & District CHC	691	19	11
8	Arrow Lakes/Upper Slocan Valley CHC	1,011	105	0
9	Greater Trail CHC	684	42	2
10	Boundary CHC	616	54	0
	British Columbia	575	66	14
As percent of BC rate				
6	Nelson & Area CHC	119%	51%	156%
7	Castlegar & District CHC	120%	29%	76%
8	Arrow Lakes/Upper Slocan Valley CHC	176%	159%	0%
9	Greater Trail CHC	119%	64%	14%
10	Boundary CHC	107%	81%	0%
	British Columbia	100%	100%	100%

The table below presents the age-adjusted utilization of hospital cases for WKBHR CHCs.

Exhibit 11

Age Adjusted Utilization of Hospital Cases
WKBHR CHCs, 1998-99

Peer CHC		Acute	ALC	Rehab	SDC
Age adjusted rate					
6	Nelson & Area CHC	136.0	2.2	0.2	72.5
7	Castlegar & District CHC	160.3	2.3	0.3	71.3
8	Arrow Lakes/Upper Slocan Valley CHC	207.7	2.6	0.0	59.0
9	Greater Trail CHC	121.4	1.3	0.1	97.3
10	Boundary CHC	118.9	3.3	0.0	48.2
	British Columbia	97.5	2.6	0.3	60.7
As percent of BC rate					
6	Nelson & Area CHC	139%	84%	66%	119%
7	Castlegar & District CHC	164%	89%	92%	117%
8	Arrow Lakes/Upper Slocan Valley CHC	213%	101%	0%	97%
9	Greater Trail CHC	125%	51%	27%	160%
10	Boundary CHC	122%	126%	0%	79%
	British Columbia	100%	100%	100%	100%

4.2.6 Peer CHCS – 5 Year Utilization Trends

The age-adjusted acute care hospital utilization (in terms of days) of residents of NAHC, the peer CHCs and BC over the five years from 1994/95 to 1998/99 is shown below.

All CHCs and BC had a drop in the age-adjusted acute care day utilization rate. BC dropped 18%, while NAHC had the second smallest drop at 12%. Sea to Sky CHC had the greatest drop, at 27%.

Exhibit 12

Age Adjusted Acute Care Utilization of Hospital Days
1994-95 to 1998-99, Peer CHCs

Peer CHC		94-95	95-96	96-97	97-98	98-99	5 yr change
6	Nelson & Area CHC	785	722	722	696	687	-12%
16	Sunshine Coast CHC	708	649	638	610	603	-15%
18	Sea to Sky CHC	880	816	771	663	642	-27%
20	Campbell River/Nootka CHC	737	670	665	630	602	-18%
24	North Peace CHC	796	756	730	781	741	-7%
28	Terrace & Area CHC	869	775	740	704	725	-16%
	British Columbia	705	654	625	600	575	-18%

The age-adjusted surgical day care hospital utilization (in terms of cases) of residents of NAHC, the peer CHCs and BC over the five years from 1994/95 to 1998/99 is shown below. BC had a 7% decrease in utilization over the 5 years while NAHC had a 2% increase. The other CHCs ranged from an increase of 12% for North Peace CHC to a decrease of 1% for Campbell River/Nootka CHC.

Exhibit 13

Age Adjusted Surgical Day Care Utilization of Hospital Days
1994/95 to 1998/99, Peer CHCs

Peer CHC		94-95	95-96	96-97	97-98	98-99	5 yr change
6	Nelson & Area CHC	71	72	70	72	73	2%
16	Sunshine Coast CHC	51	53	51	51	53	4%
18	Sea to Sky CHC	51	50	50	55	55	9%
20	Campbell River/Nootka CHC	72	76	74	76	72	-1%
24	North Peace CHC	49	55	53	53	55	12%
28	Terrace & Area CHC	71	70	77	78	71	1%
	British Columbia	65	66	65	63	61	-7%

4.3 Projection of Acute Inpatient Bed Utilization

This section develops alternative projections of inpatient bed utilization at the Health Campus to the years 2005, 2010 and 2015. The projections are based on the utilization information obtained from PURRFECT and population projections (PEOPLE 25).

The methodology is as follows:

1. The rate of utilization in terms of cases per 1000 is projected.
2. Multiplying the projected population by the projected number of cases per 1000 results in the projected number of cases.
3. The average length of stay (ALOS) is projected.
4. Multiplying the number of projected cases by the projected ALOS results in projected days.
5. The projected number of days are divided by 365 and divided by the projected occupancy rate (80 percent) to arrive at a projected number of beds.

Note that in accordance with the assumptions of "The Health Service Delivery Plan" (KPMG, 1999), no change was made in the referral patterns among CHCs except for NAHC.

The two other CHCs besides NAHC that are major users of KLRH are Arrow Lakes/Upper Slocan Valley CHC and Castlegar & District CHC.

4.3.1 Projection Scenarios

Projections of population are readily available from PEOPLE 25. Therefore projections were based on two differing scenarios, which were identified as "Rate Decline" and "Closer to Home".

Rate Decline recognizes that there has been a very long-term trend (30+ years) across Canada in the reduction of acute inpatient care utilization rates. In addition, the 5 years of historical data available shows a continuing decline in utilization rates. The Rate Decline scenario projects a continuation of drops in cases per 1000 at a rate of 0.5 percent per year, recognizing that the gains of the past may not be fully continued into the future, due at least in part to increase average age and acuity of patients.

Closer to Home uses the declining rates of cases per 1000 of the Rate Decline scenario, but increases the NAHC retention rate of inpatient care. The historical retention rate has averaged 65 percent of cases. The Closer to Home scenario projects an increase to 67.5 percent by 2005 and 70 percent for 2010 and 2015. The Closer to Home scenario is consistent with existing NAHC plans for recruitment of physicians and other health professionals.

Note that in both scenarios, the ALOS was held constant at historical rates, since it was felt that there was little potential to reduce ALOS significantly below the existing stay of about 4.5 days.

4.3.2 Projection of Cases

The table below presents the existing and projected scenario for cases at KLRH.

The ***Rate Decline*** scenario projects a continuation of drops in cases per 1000 at a rate of 0.5 percent per year. The ***Closer to Home*** scenario uses the declining rates of cases per 1000 of the Rate Decline scenario, but increases the NAHC retention rate of cases per 1000.

Exhibit 14

Historical and Projected Cases at KLRH

CHC	Historical					Rate Decline			Closer to home		
	94-95	95-96	96-97	97-98	98-99	2005	2010	2015	2005	2010	2015
Nelson and Area	2,643	2,567	2,582	2,512	2,554	2,696	2,877	3,055	2,833	3,135	3,329
Arrow Lakes/Upper Slocan Valley	163	166	146	165	136	157	157	157	157	157	157
Castlegar & District	234	192	177	192	192	191	189	186	191	189	186
Other RHB/CHCs	222	189	207	209	211	202	197	192	202	197	192
Total	3,262	3,115	3,113	3,078	3,093	3,247	3,420	3,589	3,384	3,678	3,863

4.3.3 Projection of Days of Care

The table below presents the existing and projected scenarios for days of care at KLRH.

The ***Rate Decline*** projection multiplies the number of cases and ALOS in the Rate Decline scenario. The result is about 16,622 days by 2015, an increase of 15 percent from 1998/99. Population is projected to increase by over 25 percent over the same period.

The ***Closer to Home*** projection results in 17,590 days, an increase of 24 percent from 1998/99.

Exhibit 15

Historical and Projected Days of Care at KLRH

CHC	Historical					Rate Decline			Closer to home		
	94-95	95-96	96-97	97-98	98-99	2005	2010	2015	2005	2010	2015
Nelson and Area	12,739	11,963	11,385	11,319	12,088	12,471	13,307	14,129	13,105	14,501	15,397
Arrow Lakes/Upper Slocan Valley	701	803	641	697	520	674	678	675	674	678	675
Castlegar & District	1,220	857	767	782	806	853	841	827	853	841	827
Other RHB/CHCs	761	738	797	685	742	728	709	690	728	709	690
Total	15,422	14,361	13,590	13,483	14,155	14,726	15,535	16,322	15,360	16,729	17,590

4.3.4 Projection of Beds

The table below presents the historical and projected bed requirements (not actual beds) for KLRH.

- the ***Rate Decline*** projection results in projected beds required of 50 in 2005, 53 in 2010 and 56 in 2015
- the ***Closer to Home*** projection results in projected beds required of 53 in 2005, 57 in 2010 and 60 in 2015.

Exhibit 16

Historical and Projected Beds at KLRH

CHC	Historical					Rate Decline			Closer to home		
	94-95	95-96	96-97	97-98	98-99	2005	2010	2015	2005	2010	2015
Nelson and Area	44	41	39	39	41	43	46	48	45	50	53
Arrow Lakes/Upper Slocan Valley	2	3	2	2	2	2	2	2	2	2	2
Castlegar & District	4	3	3	3	3	3	3	3	3	3	3
Other RHB/CHCs	3	3	3	2	3	2	2	2	2	2	2
Total	53	49	47	46	48	50	53	56	53	57	60

The year 2015 is used as the planning target, since this will accommodate 10 years of facility operation after a presumed opening in 2005. The Closer to Home scenario assumes the same decline in cases per 1000 as the Rate Decline scenario, but includes consideration of continuing improvement in capability of NAHC resources to be able to provide more care for NAHC residents within NAHC. Based on this rationale, the Closer to Home scenario will be used and 60 acute care beds is the target value to begin facility planning.

4.4 Future Health Campus Acute Care Bed Requirements

The projected number of acute care beds to support acute care services within NAHC indicates that 60 beds will be required by 2015. It is the intention of the NAHC to open 52 inpatient beds in 2006, with gradual opening of additional beds as demand warrants.

Exhibit 17

Acute Care Services
Acute Care Bed Requirements

	Historical		Projected		
	97/98	98/99	2005	2010	2015
Medical	28	28	32.8	35.7	37.5
Surgical	8	8	10.3	11.2	11.8
Obstetrical	6	6	4.9	5.3	5.6
ICU/CCU	3	3	4.7	5.1	5.3
Total	**45**	**45**	**52.6**	**57.3**	**60.3**
OCCUPANCY	82.1%	86.2%	80.0%	80.0%	80.0%

4.5 Projected Workload

The table below illustrates existing KLRH workload and the projected future Health Campus acute workload to 2005, 2010 and 2015.

Exhibit 18

Acute Care Services
Projected Workload - Patient Days

	Historical		Projected		
	97/98	98/99	2005	2010	2015
Medical (incl Peds)	9,358	9,803	10,649	11,598	12,195
Surgical	2,177	2,551	2,628	2,862	3,009
Obstetrical	1,117	979	1,165	1,268	1,334
ICU/CCU	831	822	919	1,000	1,052
Total	**13,483**	**14,155**	**15,360**	**16,729**	**17,590**

4.6 Proposed Staffing

A comparison between the current staffing allocation by area and the proposed staffing allocation upon opening of the acute care services is shown in the following table.

Exhibit 19

Acute Care Services
Current and Proposed Staffing Allocation - Full Time Equivalents

	99/00 Actual	2004/05 Proposed
Acute Care Services	120.83	141.44
Community - based Services	57.74	64.36
Corporate Services	41.51	68.60
Support Services	74.08	108.19
Total	**294.16**	**382.59**

More detailed information about the staffing complement by area can be found in the Pre-Construction Operating Estimate (PCOE) in Appendix D.

4.7 Proposed Operating Budget

The proposed operating budget upon opening the acute care facility is shown in the following table. The number of beds used to calculate the PCOE is 52, i.e. the plan is to start with 52 beds in operation when the facility opens.

While Corporate and Support Services are included in the budget for Acute Care Services, these services support all Health Campus facilities and services, not just Acute Care Services.

Exhibit 20

Acute Care Services
Proposed Operating Budget

	2004/05
Projected Revenue	
Acute Care Services	$23,840,121
Community - Based Services	$ 3,286,746
Total	***$27,126,867***
Projected Expenditure	
Acute Care Services	$12,244,307
Community - Based Services	$ 4,407,674
Corporate Services	$ 5,593,577
Support Services	$ 9,674,567
Total	***$31, 920,125***

More detailed information about the operating budget can be found in the Pre-Construction Operating Estimate (Appendix D).

4.8 Space Requirements

A summary of the space requirements to support acute care services is provided in the following table. More detailed information about each service group/component can be found in the Project Definition Report.

Service Groups/Components		2000 Master Program GSM
A	**High/Medium Serviced Facilities (Post Disaster)**	
A1	General Inpatient Units (50 beds)	
	Inpatient Units	1 765
	Shared Support Area	118
A2	Maternal/Newborn Care Unit (6 beds)	666
A3	Critical Care Unit (4 beds)	174
A4	Emergency	435
A5	Surgical Services	
	Surgical Suite	430
	Surgical Day Care/Same Day Admit	230
	Central Processing Department	146
A6	Diagnostic Imageing	500
A7	Laboratory Medicine/Diagnostic Services Centre	
	Laboratory	350
	Diagnostic Services Centre	251
A8	Morgue/Autopsy	43
Subtotal Component Area, A		5 108
B	**Low Serviced Facilities (Post Disaster)**	
B1	Pharmacy	200
B2	Health Information Management	
	Admitting/Discharge	71
	Health Records	191
	Health Information Systems	120
Subtotal Component Area, B		582

Service Groups/Components	2000 Master Program GSM
C Low Serviced Facilities (Non-Post Disaster)	
C1 Outpatient Services	
Shared Clinic Area	906
Medical Day Care Area	523
C2 Psychiatric Day Centre	155
C3 Rehabilitation Services	450
C4 NAHC Administration	714
C5 Education Facilities	248
C6 Volunteers/Auxiliary Services	21
C7 Spiritual Care Services	80
C8 Main Entry Facilities	230
C9 Community - based Services	
NAHC Community Support	459
KBCHSS Community Support	1 431
Subtotal Component Area, C	5 217
D Industrial/Shop Facilities (Post Disaster)	
D1 Nutrition and Food Services	691
D2 Materiel Management Services	473
Subtotal Component Area, D	1 164
E Industrial/Shop Facilities (Non-Post Disaster)	
E1 Engineering and Maintenance Services	200
E2 Housekeeping Services	76
E3 Regional Linen Services	1 000
E4 Central Staff Facilities	425
Subtotal Component Area, E	1 701
Total Component Area	**13 772**
Unassigned Gross Area (Incl. mech., ext. wall, major circulation, etc.)	4 428
Total Building A Gross Area (Acute Care & Community - based Services)	**18 200**

4.9 Existing KLRH Building/Infrastructure Condition

In 1991 and again in 2001 an assessment of the existing KLRH was completed to assess its ability to support acute care services. The two reviews are summarized below.

4.9.1 1991 Review of KLRH

Cornerstone Planning Group Limited in association with Tielker Sim Harrison Weller Architects prepared a Master Plan and Component Requirements plus structural assessment, mechanical systems assessment, electrical systems assessment, code upgrade analysis, preliminary cost estimate and preliminary phasing. Pomeroy Engineering Limited conducted the structural assessment. Tricon Consultants Ltd. conducted the mechanical systems assessment. Mahanti Engineering Ltd. conducted the electrical systems assessment. Barnett Treharne Yates (BC) Ltd. and Hanscomb provided the cost estimates in June 1991 and July 1992 respectively.

The consultants identified the areas for upgrading as:

- seismic upgrading;
- upgrading the electrical system, including lighting, distribution, communications and a new standby electrical generator;
- upgrading the distribution of piped services;
- provision of a new heating system;
- upgrading the air handling system;
- measures to increase energy efficiency;
- new methods of incineration;
- new emergency helicopter landing pad;
- improvement to the emergency entrance;
- new master lock, key and door hardware;
- general architectural improvements to improve the appearance of the facility and the efficiency of the circulation system.

In 1992, the Board of the Kootenay Lake Regional Hospital recommended the redevelopment of the hospital, which involved the building of a new acute care tower and renovating the existing building for other purposes. This recommendation was based on a comparative analysis of the cost to renovate and the cost to redevelop.

4.9.2 Physical and Functional Assessment - 2001

HSG and BCBC completed a physical and functional assessment of KLRH in January 2001 as part of the development of the Business Case. The purpose of the review was to assess the physical and functional ability of the existing KLRH to support the proposed programs and services included in the Health Campus.

Even with extensive and costly renovation of the existing building, there is not sufficient physical space to accommodate the proposed functional program for acute care services - both outpatient services and the regional laundry services would have to be moved to another site.

The building assessment identified order of magnitude cost of $3.8M to remediate building component and system deficiencies (Appendix E). Of this total, $1.6M is currently being spent to address some of the deficiencies. Other major deficiencies, such as a roof replacement, will be required within the next five years.

5.0 COMMUNITY - BASED SERVICES

The Health Campus will offer a range of community - based services. Some of these services have traditionally been offered by NAHC and some by the KBCHSS. The two organizations have begun to explore the possibilities of integrating service delivery for specific patient populations. The NAHC and KBCHSS have some history of providing shared services e.g. the Psychiatric Day Program staffed by personnel from both agencies and offered in a downtown location.

Joint committees have been established as part of the planning process. Initial indications is that there is support for exploring opportunities to collaborate in a number of areas:

- mental health services e.g. existing emergency assessments, possible psychogeriatric assessment and management
- continuing care services e.g. Meals on Wheels, Home Support Workers
- community health e.g. dental clinic, community nutrition, family health services

Further examination of these areas is planned for the master programming phase.

6.0 CONTINUING CARE SERVICES

The Health Campus will provide an opportunity to co-locate and integrate a continuum of continuing care services to the people of NAHC. Acute care services for continuing care clients will continue to be provided through KLRH. Specifically, the Health Campus will include the following services for continuing care clients:

- a 86 bed multilevel care facility;
- an Adult Day Centre which will operate 5 days a week and has the capacity to provide services to up to 30 clients each day;
- a complex of assisted - living units - 60 are planned - which will be a new form of housing for frail seniors in the NAHC.

6.1 NAHC Continuing Care Renewal Plan

NAHC intends to work together with the other West Kootenay Health Authorities to jointly develop a regional vision and plan for Continuing Care Renewal. However, it was necessary to prepare a draft plan meet the requirements for the NAHC Health Campus Business Case. The NAHC portion of the CCR plan will become a part of the regional plan yet to be created.

The WKBHR has already taken steps towards greater collaboration on Continuing Care Services:

- With the assistance of KMPG Consulting, developed a model for the delivery of health services in 1999 called "The Health Service Delivery Plan".
- Establishment in 1999 of a Continuing Care Working Group which represents the six health authorities and non-amalgamated facilities and agencies. The purpose of the group has been to "provide a forum for examining areas of common concern in the provision of these community-based services; for recommending plans for better integration and/or improvement in services; and to encourage an open and collaborative approach to service delivery".
- A review of home health care services in the West Kootenay Boundary was commissioned and delivered to the six area health authorities. The CEOs in the area received the report and endorsed four recommendations as priorities. These recommendations are directed at improvements in the provision of home health services in an integrated manner.
- Participation in certain shared regional services, such as the Regional Linen Service, Infection Control Committee, Occupational Health and Safety, Pharmacy Services, HVAC, Biomedical Engineering, Pathology, and Human Resources.

The priority health and health system issues from the West Kootenay Boundary Health Services Plan for 2000 – 2003 are as follows. These are all issues for the seniors' population and continuing care services.

Health Issues & Goals	Health System Issues & Goals
Poverty: To reduce the effects of poverty on health and reduce poverty.	**Structure of the System**: To establish effective, efficient, regionally coordinated governance and management of health services.
Ageing Population: To assess and respond to the health needs of seniors, within available resources.	**Continuum of Health Services:** To create a seamless care system to meet identified health care needs.
Addiction and Substance Abuse: To reduce addiction and illness, injuries, and premature deaths caused by inappropriate use of alcohol, tobacco, and other substances.	**Geography and Dispersed Rural Population:** Equitable access to services and other supports for healthy, independent living.
Preventable Injuries: To reduce preventable injuries and deaths	**Human Resources**: To recruit and retain qualified health service workers.

6.1.1 Services Provided

The NAHC and the Kootenay Boundary CHSS deliver an array of facility and home-based continuing care services.

NAHC Services	Residential care facilities (Intermediate Care, Extended Care and Multilevel Care) are located in Nelson and Kaslo. Home-based services are available, though occasionally limited, throughout the area. They include home support, adult day programs, meals on wheels and congregate meals, Lifeline emergency response, transportation services, and volunteer programs.
KBCHSS Services	Case management, home care nursing, and community rehabilitation

Some area residents access services at Trail, Castlegar or Creston hospitals. Outreach services such as Diabetic Education, Physiotherapy and Respiratory Therapy provide services to the four NAHC rural areas.

Mental health services for the elderly are provided by the KBCHSS. Addictions Services are provided through the Ministry of Children and Families. The Nelson and District Hospice Society coordinates hospice services through NAHC.

There are many small volunteer groups in all the communities working towards the creation of additional supportive housing options for seniors.

6.1.2 Continuing Care Renewal Goals

The following issues were identified through community consultations, needs assessment and services analysis. They are to be addressed in the next three years:

- redesign of current facilities to better meet client and community needs
- shifting service provision towards home-based care
- improved client access and system responsiveness

The goals for Continuing Care Renewal include:

- creation of a Health Campus (to include assisted - living housing, a new multilevel care facility, an acute care centre, and other community - based services co-located in a central location) to replace ageing, obsolete health care facilities
- establish a broader vision for health care, incorporating Renewal principles, which involves assisted - living
- enhanced home care services
- increased funding for home-based options
- increased collaboration between NAHC, KBCHSS and MCF
- improved coordination between acute care and continuing care services
- de-emphasize acute care service and place increased emphasis on community - based and alternate provision of care
- establish a broader vision
- team up with educational institutions to provide the necessary training for these staff

6.2 Demand For Continuing Care Services

Changes in the population distribution, especially in the older age group, will have a marked impact on continuing care service usage. The percentage of the population that is over 65 years of age is currently about 13%, slightly greater than the BC average.

6.2.1 Growth in Seniors Population

From 2000 to 2015, the senior's population is projected to grow by almost 59%. The largest percent change will be in the 65 - 74 age group (78.2%), followed by the 85+ age group (68.2%).

Exhibit 21

Nelson Area Health Council
Seniors Population 2000 and Projections 2005, 2010 and 2015

Age Group	2000	2005	2010	2015	Percent Change 2000 - 2015
65-74	2,111	2,301	2,692	3,761	78.2%
75-84	1,310	1,416	1,477	1,627	24.2%
85+	447	625	718	752	68.2%
Total	**3,868**	**4,342**	**4,887**	**6,140**	**58.7%**

6.2.2 Factors Affecting Need For Care - Depression and Dementia

The presence of certain conditions such as depression and dementia has been shown to influence the decision to seek admission to residential care. A proportion of the seniors' population who access support or care services experience depression or dementia. Some individuals are able to live alone if services are provided to them in their home while others require a residential environment. This section provides estimates of the prevalence of depression and dementia in the over 65 population of the NAHC. It also suggests the number of individuals who could be cared for at home versus the numbers who would likely require residential care.

McEwan, et al. (1991)[4] in a major study of mental health problems among Canada's seniors reported age specific depression prevalence rates for seniors as follows: 8.8% for 65-74 years; 10.5% for 75-84 years; and 12.6% for the 85+ group.[5] They state that these rates are conservative. Application of these rates to the NAHC seniors' population suggests that 380 seniors suffer from depression and this number will increase by 57.1% over the next fifteen years.

Exhibit 22

Nelson Area Health Council

Projected Number of Residents with Depression

(may or may not be in residential care)

Year	65 - 74	75 - 84	85+	Total	Percent Change
2000	186	138	56	380	
2005	202	149	79	430	13.2%
2010	237	155	90	482	12.1%
2015	331	171	95	597	23.8%

The Canadian Study of Health and Ageing Working Group (1994) estimated the prevalence rates for dementia among Canadian seniors to be: 2.4% for the 65-74 years group, 11.1% for 75-84 years and 34.5% for the 85+ group.[6] Application of these rates to the NAHC seniors population suggests that as many as 350 seniors have some form of dementia. This number is projected to increase by 51.4% over the next fifteen years.

Exhibit 23

Nelson Area Health Council

Projected Number of Residents with Dementia

(may or may not be in residential care)

Year	65 - 74	75 – 84	85+	Total	Percent Change
2000	51	145	154	350	
2005	55	157	216	428	22.3%
2010	65	164	248	477	11.4%
2015	90	181	259	530	11.1%

McEwan, et al. report that anywhere from one third to one half of the population with dementia require institutional care – applying this estimate to the projected number of people with dementia would mean that 116 to 175 people may currently require institutional care.

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[4] McEwan, K.L. Donnelly, M., Robertson, D., & Hertzman, C. (1991) Mental Health Problems Among Canada's Seniors: Demographic and Epidemiologic Considerations. Health & Welfare Canada.

[5] McEwan et al. use a formula for age-specific prevalence rates derived from an integration of 47 studies conducted between 1947 and 1985. They acknowledge the differences across studies in sampling and diagnostic criteria.

[6] Canadian Study of Health and Ageing Working Group (1994). The Canadian Study of Health and Ageing: Study Methods and Prevalence of Dementia. Canadian Medical Association Journal, 150 (6) 899-913.

6.3 Utilization Patterns

The following utilization information was extracted from PURRFECT 5.0 and PEOPLE 24 available from the Ministry of Health.[7]

6.3.1 Alternate Levels of Care

Alternative level of care days and cases may provide an estimate of unmet need for facility care. NAHC experienced 64 cases designated ALC in 1998/99, representing 997 inpatient days (or 2.7 bed equivalents). The ALC cases/per 1000 population for NAHC is 2.18, below the BC rate of 2.58. Providing additional community supports and/or residential/housing options would allow people to be placed appropriately and should have a marked impact on ALC days and their associated costs.

Exhibit 24

Nelson Area Health Council
Alternate Level of Care - Cases and days 1998/99

1998/99	Cases/1000 Population	Days/1000 Population
Nelson & Area	2.18	34
Province	2.58	66

6.3.2 Current Residential Beds

The current distribution of residential beds is shown in the table.

Exhibit 25

Nelson Area Health Council
Current Residential Beds

Level of Care	Nelson Jubilee Manor	Mount Saint Francis	Willowhaven Private Hospital	Victorian Hospital of Kaslo	Total
EC	0	78	11	5	94
IC3	12	0	44	0	56
IC2	26	0	27	0	53
IC1	0	0	0	0	0
PC	0	0	0	0	0
Respite	1	1	0	0	2
Total	39	79 *	82	5	205

*MSF Hospital has one Palliative Care and one Respite bed included in this total number. NJM has 6 private pay and one Respite bed, and WPH has 2 private pay beds, which are also included in the total number. Therefore, the NAHC presently has a total of 197 MOH-funded long term care beds.

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[7] Although PEOPLE 25 population data was available at the time of writing, corresponding utilization data for 1999/2000 was not. To maintain comparability in data, PURRFECT 5.0 and PEOPLE 24 were used.

6.3.3 Waitlist For Facility Placement

The registered wait lists held by the Kootenay Boundary Community Health Services Society portray estimated demand as follows.

Exhibit 26

Kootenay Boundary Community Health Services
Waitlist For Facility Placement

Facility	Total	Level Of Care			
		EC	IC 3	IC 2	IC 1
Nelson Jubilee Manor	75	0	17	57	1
Willowhaven Private Hospital	15	0	3	12	
Mount St Francis Hospital	1	1			
Victorian Hospital of Kaslo	0	0			
Total	**91**	**1**	**20**	**69**	**1**

Points to note regarding these statistics include:

- 20 IC 3 clients and 1 EC client await within the community for placement within NAHC facilities,
- 69 IC 2 clients and 1 IC 1 level client await placement,
- A total of 91 citizens within the Nelson area are waiting for increased levels of care.

There may well be clients from other communities awaiting placement in Nelson area facilities.

6.3.4 Continuing Care Service Utilization

The table provides a graphical representation of continuing care service utilization in the Nelson area as compared to the British Columbia utilization rates. Although home nursing visits and home support cases are higher than the provincial rate, adult day care cases and occupational therapy and physiotherapy are lower. These services are ones that if available, may increase the ability of seniors to remain in their own homes or in supportive housing longer, thus deferring or avoiding unnecessary institutionalisation.

Exhibit 27

Continuing Care Service Utilization
Rates for Nelson Compared to BC Rates, 1998/99

	Nelson Total Clients/1000 Population	Nelson total raw count	98/99 ASSUR per 1,000	BC rate	[redacted]
RESIDENTIAL CARE					[redacted]
Extended Care Days	6.12	32,184	1,287	943	[redacted]
IC1 days	0.04	163	6.53	55	[redacted]
IC2 Days	3.32	18,814	754	602	[redacted]
IC3 Days	3.11	17,237	689	652	[redacted]
Personal Care Days	0	0	0	5.2	[redacted]
DIRECT & COMMUNITY CARE					[redacted]
Home Care Nursing Cases	12.19	342	13.5	10.1	[redacted]
Home Care Nursing Visits		10,091	398	187.9	[redacted]
OT Cases	0	0	0	2.8	[redacted]
OT Visits		0	0	8.52	[redacted]
PT Cases	1.58	40	1.58	3.65	[redacted]
PT Visits		136	5.38	17.19	[redacted]
Adult Day Care Cases	0.11	3	0.11	1.4	[redacted]
Adult Day Care Visits		26	1.03	48.8	[redacted]
Home Support Cases	16.05	409	16.16	11.7	[redacted]
Home Support Hours		55,320	2,189	1,940	[redacted]

The rural nature of the communities in NAHC entails extensive travel time for staff supporting clients in their own homes. Home Nursing does not, and Home Support finds it difficult to, cover the needs of isolated and confined clients who require increasing hours of care and who would do better in a residential program which supports ageing - in - place. Therefore, these services may not be able to replace residential care and should be considered to augment this service.

6.4 Projected Utilization of Continuing Care Services

Projections have been developed for continuing care services using two approaches - a straight-line projection based on current utilization and a substitutionary approach suggested as part of the Continuing Care Renewal initiative.

6.4.1 Straight-line Projections

The table outlines the projected utilization (in number of clients) of continuing care services in the Nelson area from 2001 to 2015. These are rough estimates only and are based on straight-line projections.

Exhibit 28

Projected Utilization for Continuing Care Services - 2015)[8]

	Nelson Total Clients/1000 Population	2001 Utilization (# of clients)	2005 Utilization (# of clients)	2010 Utilization (# of clients)	2015 Utilization (# of clients)
POPULATION (based on PEOPLE 24)		**25,544**	**27,136**	**30,052**	**33,070**
RESIDENTIAL CARE					
Extended Care Clients	6.12	156.33	166.07	183.92	202.39
IC1 Clients	0.04	1.02	1.09	1.20	1.32
IC2 Clients	3.32	84.81	90.09	99.77	109.79
IC3 Clients	3.11	79.44	84.39	83.46	102.85
Personal Care Clients	0	0.00	0.00	0.00	0.00
DIRECT & COMMUNITY CARE					
Home Care Nursing Clients	12.19	311.38	330.79	366.33	403.12
OT Client	0	0.00	0.00	0.00	0.00
PT Clients	1.58	40.36	42.87	47.48	52.25
Adult Day Care Clients	0.11	2.81	2.98	3.31	3.64
Home Support Clients	16.05	409.98	435.53	482.33	530.77

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[8] Population projections based on PEOPLE 24. Assumes straight-line projections of utilization. Uses all population, not just those 65+ or continuing care eligible.

Using straight-line projections, the number of people requiring facility care in 2015 is projected to be 416, including 202 at the Extended Care level and 103 at the Intermediate Care 3 level. There would also be 111 individuals requiring facility care at the IC 1 and 2 levels.

6.4.2 Continuing Care Substitution Model

According to Continuing Care Renewal, the intention is to shift the distribution of services so that individuals receive care in the community as much as is possible. This direction suggests enhanced community supports with the use of facility care for individuals who have more complex care needs. The current distribution of continuing care services is shown in the following table.

Exhibit 29

Continuing Care Services

Current Distribution, 1998/99

Care Level	Clients				Percent		
	Residential Care[9]	Home Support	Assisted - living	Total	Residential Care	Home Support	Assisted - living
EC	94	5	0	99	95%	5%	0%
IC 3	56	26	0	82	68%	32%	0%
IC 2	53	100	0	153	35%	65%	0%
IC 1	0	92	0	92	0%	100%	0%
Total	203	223	0	426	48%	52%	0%

Continuing Care Renewal is predicated on the strategy that facility care will only be provided for individuals with the most intense care needs i.e. those at EC and IC 3 levels. It is assumed that IC 1 and IC 2 residents will not be admitted to care facilities in the future, but instead, will be supported to live in the community with programs such as home care services, adult day care, respite care, etc. These individuals will also likely occupy assisted - living units.

Based on the projected service utilization for residential care and home support shown in Exhibit 29, the re-distribution of services has been calculated using the percentages inherent in the medium shift scenario. In addition to residential care and home support, there has been a shift to identify the potential demand for assisted - living.

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[9] IN NAHC, there are 197 beds which receive funding from the Ministry of Health. An additional 5 beds are private pay.

Exhibit 30

Proposed Continuing Care Service Distribution 2005
Based on Medium Shift

Care Level	Projected Number of Clients			
	Residential Care	Home Support	Assisted - Living	Total
EC	150	18	9	177
IC 3	67.5	40.5	27	135
IC 2	28.5	171	85.5	285
IC 1		181		181
Total	**246**	**410.5**	**121.5**	**778**

Percent Shift		
Residential Care	Home Support	Assisted - Living
85%	10%	5%
50%	30%	20%
10%	60%	30%
0	100%	0

This service shift represents a medium shift in services. As part of the development of the Continuing Care Plan for the health authorities in the West Kootenays, there will need to be further consideration regarding the appropriateness of the shift for this community.

7.0 MULTILEVEL CARE FACILITY

The multilevel care facility will be built to accommodate the following categories of residents:

- the ambulant with significant behavioural problems
- the non-ambulant with no significant behavioral problems
- the non-ambulant with significant behavioral problems

7.1 Description of Services

The Multilevel Care Facility will provide a number of programs and services to enhance the abilities and quality of life of its residents. The resident will be the focus of all activity within the facility. Whenever possible, the resident and family will be involved in determining what services are required and how they will be provided. The focus will be towards a home-like environment as opposed to a 'hospital' environment. In addition, the Continuing Care Program has specified certain standards related to the provision of care, which will guide the Facility Care Program.

Care will be provided based on a clearly articulated philosophy, which will be developed collaboratively by residents and facility staff. The Health Council will provide overall direction to the Facility and operational management of the facility will be delegated to professional staff.

The multilevel care philosophy is based on 'ageing in place,' which will result in residents being allowed to remain in their chosen place when their care level alters. In the past, when an elder weakened or was physically or mentally challenged, s/he was forced to move to a different facility and environment, which was often a challenge in becoming accustomed to the new environment.

Defined programs and services will be provided within the multilevel site, while others will be the responsibility of the resident and/or family. Residents will also be able to take advantage of services offered from the community.

From the site, a community-bathing program will offer basic support to citizens through routine bathing in the whirlpool tubs with lifting assistance.

Services to be provided within the Multilevel Care Facility include:

Resident Care including Palliative Care and/or Respite Care as required
- Intermediate and Extended Care Level

Recreation Services
- Activity Programs
- Music Therapy
- Pet Therapy

Therapy Services
- Physiotherapy and Occupational Therapy

Food and Nutrition
Pharmacy
Environmental Services (maintenance, laundry, housekeeping, safety)
Administration

Services to be provided by contractors include:

Physician Services (Medical Coordinator)
Social Work (assessment, counselling, advocacy, transfer/discharge planning)

Services that are the responsibility of the resident/family include:

Attending Physician – Medical Care
Dental Care
Hairdresser
Specialized Services (special personal laundry/dry cleaning)

Services to be provided by the community include:

Spiritual support - including ministerial visiting
Volunteers - including intergenerational visiting programs, animal visiting.

7.2 Demand For Multilevel Care Services

Based on the Continuing Care Renewal substitutionary model, it is estimated that there will be 246 clients who require residential care in 2005: 150 clients at the Extended Care level and 68 clients at IC 3 level. There are also 28 clients at the IC 2 level who require some form of supportive care within a facility. Since there are currently 94 residential beds devoted to EC level care and 56 beds devoted to IC 3 level care, even with the increase in multilevel care beds represented by Mount Saint Francis, there will be a shortfall of residential beds.

7.3 Links With Other Services and Programs

Multilevel care will be linked to numerous services and programs including: assisted - living program, continuing care services, community-based services, acute care services and community churches and groups.

7.4 Projected Workload

The projected workload is shown in the following exhibit.

Exhibit 31

Nelson Area Health Council
Multilevel Care Beds – Projected Workload

Indicator	Total
Number of Beds	86
Number of Admissions/Year	15
Maximum Resident Days/Year	31,390
Percent Occupancy	98%
Projected Resident Days/Year	30,762

7.5 Proposed Staffing

The staffing allocation to support the Multilevel Care Beds is based on the following assumptions:

- individuals require the care of a multidisciplinary staff;
- the proposed staffing allocation is based on the Ministry of Health Guidelines;
- The Chief Executive Officer for the NAHC will be responsible for, and housed on, the Health Campus site;
- The Executive Director of Patient Care Services will be responsible for multilevel care and acute care programs;
- The Director of Food Services and Director of Maintenance/Engineering/Housekeeping will be responsible for these services on the Health Campus Site as well as the other NAHC sites;
- Support services will include: Human Resources, Financial and Corporate services;
- Staffing for the multilevel site will be allocated through the enhanced consultative process involving human resources, staff and unions.

The staffing allocation is shown in the exhibit.

Exhibit 32

Nelson Area Health Council
Multilevel Care Facility – Proposed Staffing Full Time Equivalents

	FTEs
Professional	19.620
Non-Professional	39.250
Dietary	10.710
Housekeeping	7.740
Laundry	1.376
Maintenance	1.500
Business Office	1.360
Administration	1.000
Total	82.556

7.6 Proposed Operating Budget

The proposed operating budget is shown in the following exhibit. A number of assumptions were used to estimate the operating budget for the 86 multilevel care beds:

- the resident portion for each day is $26.30 (March 2001); and
- the Ministry of Health contribution for each resident day is $125.00.

Note: this budget does not include expenditures related to services shared with the rest of the Health Campus. Specifically, it does not include expenses related to food services, physical plant, purchasing, etc.

Exhibit 33

Nelson Area Health Council
Multilevel Care Facility – Proposed Operating Budget

	2004/05
Projected Revenue	
Resident Per Diem @ $26.30/day x 31,390 days	809,862
MOH Contribution	3,923,750
2% Vacancy Factor	(94,986)
Total	**$4,638,940**
Projected Expenditure	
Total Compensation	3,374,992
Nursing Administration	300,920
Total	**$3,675,912**

7.7 Space Requirements

The estimated space requirements are based on Ministry of Health space guidelines. The space estimates have been calculated based on the assumption that some direct services will be shared - specifically food services and plant services - with the rest of the Health Campus.

The total space requirements for the Multilevel Care Facility (including the Adult Day Centre) are 6,165 GSM.

7.8 Building/Infrastructure Condition

In 1994 and again in 2001 an assessment of the existing Mount Saint Francis Hospital was completed to assess its ability to support the needs of its residents. The two reviews are summarized below.

7.8.1 1994 Review

In 1994, the Marie Anne Blondin Society contracted with Raymond Goldsworthy Architect Ltd. to do a facility evaluation of Mount St. Francis Hospital. This study encompassed a program analysis, functional analysis, and summary of options related to the use of the current structure and to the site, comments on phasing, capital cost estimates, facility assessment and recommendations. The findings of this study indicated that the facility was "functionally obsolete" as most aspects of the building did not meet with multi-level care guidelines. In fact most room areas were only half of the size required to meet the guidelines.

7.8.2 2001 Review

HSG and BCBC completed a physical and functional assessment of Mount Saint Francis Hospital January 2001 as part of the development of the Business Case. The purpose of the review was to assess the physical and functional ability of the existing Hospital to support the proposed programs and services included in the Health Campus.

The assessment concluded: "the existing infrastructure is inappropriate for any level of residential care with respect to the current thinking re environment, scale and accessibility. The building assessment identified order of magnitude cost of $1.2M to remediate building component and system deficiencies (Appendix F).

8.0 ADULT DAY CENTRE

The Adult Day Centre will have space for 30 clients, 5 days each week. It is estimated 20 would be from the population of frail elderly and 10 would be clients with moderate dementia. Participants in the Adult Day Centre would include adults living in the assisted - living housing on the health campus as well as others from the rest of the community. Separate programming for dementia care will be provided. About 25% of the clients are expected to be seniors with mental health problems, including social isolation and behavioral difficulties. In addition, a Congregate Meals Program allows non-eligible seniors and family members to join clients for the nutritious hot noon meal.

8.1 Description of Services

The services provided by the Adult Day Centre will include:

Health Monitoring and Health Promotion

- Grooming and personal care assistance, guidance on nutrition and health care such as medications, insulin testing, bladder and bowel control, podiatry services, blood pressure monitoring

Therapeutic Activities

- Maintenance or enhancement of activities of daily living
- Physiotherapy and Occupational Therapy services
- Rehabilitative activity programming to meet individual needs
- Orientation/reminiscence therapy
- Mental and physical stimulation to meet individual abilities
- Special programming for confused participants
- Music, pet and art therapies enrich the daily program activities
- Exercise classes

Social/Personal Activities

- Individual and group programs encouraging interaction for improvement of self-esteem
- Age appropriate activities
- Intergenerational activities
- Community interaction
- Respite service for family caregivers
- Family support and care assistance

Nutrition

- A main meal and two nutrition breaks are provided daily
- Special diets and vegetarian meals are available
- Wheels to Meals, a congregate meals program, allows other seniors and family members to join ADC clients for the noon meal

Transportation

- Transportation to and from the Program
- Weekly outings and shopping trips

The hours of operation for the Adult Day Centre will normally be Monday to Friday (excluding statutory holidays) from 0830 to 1630 hours. Clients will normally be on-site for four to six hours.

8.2 Estimated Demand

The utilization of Adult Day Care in NAHC is currently 8% of the BC rate (0.11 cases per 1000 population for NAHC versus 1.4 cases /1000 population for BC). NAHC believes that there are clients within the area who could benefit from ADC who have not been identified or referred to these services. For example, anecdotal information reported by Home Support workers and calls from caregivers suggest a need for adult day services as respite for seniors with moderate and severe dementia.

The NAHC has identified ADC as an area for expansion under Continuing Care Renewal. Estimating the number of ADC spaces required in the future based on the 1998/99 utilization rate is felt to be inappropriate since it reflects historical referral and usage patterns.

8.3 Workload And Staffing

Workload projections are based on total visits possible for 12 months for 30 spaces per day (250 days x 30) at 70% utilization.

Exhibit 34

**Adult Day Centre
Projected Workload**

Indicator	2004 - 2005
Client Spaces	30
Client Days	5,460

Projected staffing for the Centre is shown in the following table.

Exhibit 35

**Adult Day Centre
Projected Staffing**

Staff Category	Full Time Equivalents
Program Coordinator	0.5
Registered Nurse	1.0
Activity Aide/Day Care Attendant/Clerical/Driver	4.0
Cooks	1.0
Total	7.5

8.4 Proposed Operating Budget

A number of assumptions were used to develop the budget estimates:

- Calculations were based on Ministry of Health Multilevel Service Costing Guidelines
- Client portion of costs are calculated as follows - $7.00 per visit

- Relief is calculated at 17%
- Benefits are calculated at 19%

Exhibit 36

Adult Day Centre
Estimated Annual Operating Budget

	2004/05
Projected Revenue	
Continuing Care Grant ($70/day x 5,460 days)	$382,200
Client Contribution	$ 38,220
Congregate Meals Grant	$16,628
Total	***$437,048***
Projected Expenditure	
Salaries and Benefits	$260,478
Property and Maintenance	$50,150
Administration and Supplies	$66,420
Food Costs	$60,000
Total	***$437,048***

8.5 Space Requirements

The space for the Adult Day Centre is included with the Multilevel Care Facility.

9.0 ASSISTED - LIVING

Assisted - living is based on a home care model, not a residential facility care model. The Nelson and Area Health Council defines assisted - living as:

> *"The provision of personal care and health services in a housing environment rather than a care environment. Assisted - living ensures coordinated health services and features individualized partnership agreements for service and risk management to maintain a high degree of tenant and family involvement and to encourage independence."*

Co-location of assisted - living on the Health Campus will provide an opportunity for couples or individuals who are faced with the challenges of ageing and/or maintaining their independence to have the opportunity to live independently in their own apartment while taking advantage of access to services provided at the site i.e. adult day care, meal service, respite care, podiatry, etc.

9.1 Participants

A tenant in the assisted - living complex would be eligible for continuing care services and require both housing and care services. Most of the tenants could be described as "frail" and likely would have characteristics commonly found in a person assessed at the IC2/IC3 level of care i.e. the person who is independently mobile, requires moderate assistance with activities of daily living and daily supervision. Potential residents may include those who are:

- 75 and over
- living alone with inadequate supports
- experiencing a moderate disability

Seniors might choose to live in an assisted - living housing environment for several reasons:

- A convenient location, close to other health services
- Health and safety considerations
- Opportunities for company and recreation
- Reduced housekeeping and maintenance tasks, and
- Improved nutrition

They might move in as a result of an immediate need, or as a way of planning for the future when their needs might change. Although assisted - living housing has appeal for many seniors, it can be of particular benefit to those who:

- Have difficulty with tasks such as personal care, meal preparation, grocery shopping, and regular home cleaning and maintenance
- Have little social contact, causing a negative effect on mental and physical health
- Have physical mobility problems
- Have mild to moderate dementia
- Have safety or security concerns
- Are living alone

There are some specific characteristics of seniors who live close to the proposed development that should be taken into consideration.

The role of adequate nutrition, social contacts and a safe environment contributes significantly to well being. As the NAHC serves a widely dispersed population in rural areas, it is important to make housing available in the smaller communities but also to have a critical mass of housing suitable for seniors within Nelson. For many years there has been a low (1.6 - 2%) residential vacancy rate in Nelson, which is the lowest vacancy rate in the Kootenays. Rental rates are higher than most Kootenay communities with an average of $450.00 for a one-bedroom apartment. Prospective renters are in competition with an increasing student population. There have been few units added to the rental market in the past few years, which contributes to the low vacancy rates and high cost. Although a senior who has owned a small farming acreage, with an older house in reasonable condition, might realize on average $129,000 for the property, these funds could only purchase what is considered a low end older condominium that is not located close to bus routes, stores etc. Currently there has been no move by developers to develop patio homes suitable for seniors. It must also be recognized that the steep slopes within Nelson provide challenges to creating housing projects with easy access for clients who may have physical handicaps. Winter conditions and slopes provide additional hazards.

The economic situation of this area also is a significant factor when considering the need for housing for seniors. The average employment income at $22,812 is significantly below the provincial averages. A significant portion of the elderly population in this area lives without the benefit of having children close-by who can provide care and transportation.

9.2 Description of Services

Assisted - living is another option for seniors, an alternative to moving to a residential care facility. The tenant rents the unit and tenants are free to come and go from the assisted - living facility at their own discretion.

Tenants pay monthly rent in an amount similar to what they would pay if they were admitted to a conventional continuing care facility. Rent is expected to be approximately $900 per month.

The tenant would be provided with the following:

- weekly housekeeping
- one meal per day (all meals can be provided for an additional fee)
- LIFELINE (personal emergency response system)
- 24/7 on site service by assisted - living staff
- recreational/social activities
- medication assistance, if needed, through the Home Care Nursing program
- other available programs and services

If professional support services were required, they would be provided to eligible tenants through the local Continuing Care program (home care nursing, community rehabilitation, mental health programs).

9.3 Estimated Demand

Demand for assisted - living has been estimated based on two scenarios: using index rates and projections estimated using a substitionary model.

9.3.1 Index Rates

Typically, the demand for assisted - living housing is estimated using 5% and 10% index rates. These rates are congruent with estimates of the "frail" component of the population over age 65. While it is most likely that tenants will be drawn from the 75+ age group, the index rates have been applied to the total 65+ population. We expect there will be some additional clients requiring this service from outside this age group.

The estimated demand in 2000 for assisted - living for seniors 65+ in the NAHC area using a 5% index rate equals 194 units. The number of units estimated for seniors 75+ is 88 units.

Exhibit 37

Nelson Area Health Council
Projected Demand 2000 – Assisted - living Units For Seniors Over 65

Age Group	Number	5%	10%
65 – 74	2,111	106	211
75 – 84	1,310	66	131
85+	447	22	45
All 65+	3,868	194	387

Using the same index rates, the demand for the next fifteen years has also been projected for seniors 75+. Studies show that assisted - living would appeal to seniors in all age groups, but primarily to those ages 75 and over.

Exhibit 38

Nelson Area Health Council
Projected Demand 2000, 2010, 2015 and 2015 – Assisted - living Units For Seniors Over 75

	2000	2005	2010	2015
5%	88	102	110	119
10%	176	204	220	238

9.3.2 Estimating Demand Using Substitution

Applying the principles of Continuing Care Renewal to the NAHC scenario in 2005 suggests that there will be a demand for over 120 assisted - living units. The number and care level of tenants is shown in the exhibit.

Exhibit 39

Estimated Demand For Assisted - Living - 2005
Based on Medium Shift

Care Level	Number of Tenants
EC	9
IC 3	27
IC 2	85.5
IC 1	0
Total	121.5

9.3.3 Waitlist For Facility Care

In addition to the projected demand based on population, the NAHC has identified a group of potential tenants of the assisted - living units. These are clients currently receiving continuing care services who are on a waitlist for facility placement. During the 1999/2000 fiscal year, there was an average of close to 69 clients assessed at IC2 level who were waitlisted for placement. The waitlist increases if higher levels are included.

Using a conservative figure of 80%, suggested by experience of the CHOICE Program in Edmonton, it is estimated that approximately 55 individuals (80% of 69) currently on the facility waitlist would be suitable candidates for assisted - living.

9.3.4 Current Availability of Assisted - living Units

There are a number of subsidized/sponsored housing units in Nelson. Of the 125 total units, 95 offer subsidized housing for seniors, 5 offer congregate housing for seniors, and 25 offer mental health housing. The current Continuing Care home-based services provided to adults in these units is demonstrated in the following table. Home support is the most frequent service received. The majority of the Home Support clients in these units (13) are at the IC2 level, with seven at IC1, one at IC3, and three short-term clients.

Exhibit 40

Continuing Care Services to Residents in Supportive Housing

# Housing Units	Home Support	Adult Day Centre	Meals on Wheels	Home Care Nursing	Rehab
125	24	21	14	?	?

There are currently no assisted - living units available in this area. The lengthy wait lists for facility care and numbers of Alternate Level of Care patients in acute care support a need to move towards a new model of caring for seniors. Assisted - living will expand the range of housing options available, decreasing the number of individuals living at risk and decreasing the need for residential care services, including acute care.

9.4 Links With Other Services and Programs

Some of the tenants of the assisted - living units would likely receive Continuing Care Services such as Home Nursing Care, Case Management and Rehabilitation. They may also attend the Adult Day Program offered at the Health Campus. Meals on Wheels and HandiDart transportation services, provided by the NAHC, would also be available to the residents.

Other Health Campus services will be very close by to support the health and well-being of the assisted - living residents, such as physicians offices, community and social services, therapists, and alternative medicine practitioners, the multilevel care facility, the home support program and acute care services. Daily transportation to downtown will be provided from the Health Campus.

9.5 Projected Workload

The projected workload is shown in the following exhibit.

Exhibit 41

Nelson Area Health Council
Assisted - living – Projected Workload

Indicator	Total
Number of Units	60
Number of Admissions	10
Maximum Number of Days	21,900
Percent Occupancy	100%
Projected Days	21,900

9.6 Projected Staffing

The staffing allocation to support the assisted - living tenants is based on the following assumptions:

- Individuals are able to look after most of their needs with minimal assistance from non-professional staff.
- Professional services are delivered within a home care model by local health authorities (case management, nursing, rehabilitation, and elderly outreach mental health services).
- Supportive services provided will include a main meal daily (with option to purchase remaining meals); weekly housekeeping, laundry and maintenance services
- 24 hour personal care assistance is available from on-site staff (activities including bathing, dressing, eating, toileting and mobilization)

The staffing allocation is shown in the exhibit.

Exhibit 42

Assisted - Living

Proposed Staffing Full Time Equivalents

	FTEs
Professional	6.280
Non-Professional	17.355
Dietary	5.040
Housekeeping	2.925
Maintenance	.630
Business Office	.960
Administration	.720
Total	33.91

9.7 Proposed Operating Budget

The tenants will pay a monthly rent roughly equivalent to the amount they would pay if they resided in a care facility. The projected operating budget is shown in the following exhibit.

A number of assumptions were used to estimate the operating budget for the 60 assisted - living units:

- the Tenant portion for each unit is $900/month; and
- the Ministry of Health contribution for each unit is $70.00 per tenant per day.

Exhibit 43

Assisted - Living

Projected Operating Budget – 60 Units

	Budget
Operating Revenue	
Ministry of Health - 60 Assisted - living Units	1,495,200
Resident rental - 60 Assisted - living Units	648,000
2% vacancy contingency	(43,000)
Total Operating Revenue	**$2,100,000**
Operating Expenses	
Salaries and Benefits	1,712,865
Other Costs	433,100
Total Operating Expense	**$2,145,965**

9.8 Space Requirements

Assisted - living units are private suites, rented by tenants, who furnish their suites with their own furniture and personal belongings. Each suite is complete with private bathroom, living room, one bedroom and kitchenette. There are common areas for a central dining room or restaurant, social and activity space as well as recreational amenities. The one-bedroom units are approximately 575 square feet.

The vision for the building is single storey, built in a square, with an inner courtyard for paths, for sitting and walking. The building conforms to the housing code for seniors' independent living. The building is very residential in orientation and not at all institutional in appearance or operation. There is no nursing station but user-friendly supports will be available.

The space estimates for the assisted - living units indicate a total of 3,770 square metres will be required for 60 units.

10.0 HEALTH PROFESSIONALS CENTRE

The Health Professionals Centre will offer space to health care practitioners where a variety of services and functions may occur. Initial discussion with community physicians indicates that there is interest in locating medical practices in this facility. Alternative health practitioners also see this as an opportunity to offer an array of services complimentary to the other Health Campus activities.

10.1 Description of Services

The following are potential services to be located in the Health Professionals Centre component of the Health Campus:

Aboriginal Healing
Acupressure
Acupuncture
Art Therapy - Kootenay Art Therapy Institute
Chi Gong
Chinese Medicine - School Of Oriental Medicine
Chiropodist
Chiropractor
Hypnotherapy
Massage Therapy
Meditation
Reflexology
Relaxation Therapy
Stress Management
Therapeutic Touch
Yoga
Watsu

Walk-in/Urgent Care Clinic
Dental Clinic
Physicians/Specialists Office Space
Red Cross Loan Cupboard

10.2 Space Requirements

See Master Space Plan

11.0 SITE CONSIDERATIONS

Not only does the Mount St. Francis Hospital site have a very pleasant ambiance, there are a number of advantages in co - locating the program components on one site. There are scales of economies to be realized by the various support services such as laundry, food services, pharmacy, maintenance and engineering, etc., being on one site. In addition, the services, when needed, would be at close proximity to all of the clients. This is very much in keeping with vision of the Nelson and Area Health Council to create a "health campus" where clients can move from one level of care to another with less disruption as presently occurs. This is part of the reason that assisted - living is referenced. It is one way of not only creating a health care campus, but also creating a seamless health delivery system that would be client focused and sensitive to the needs of residents.

11.1 Impact of Co - Locating Facilities

The major benefit of collocating the acute and long term care programs is the efficient use of staff time. The building plan must support this concept. The acute care and multilevel care services need the same support services such as administration, food service, laundry, materiels, plant services, etc. By collocating the two care types it would also ease the transfer from one level of care to another. However, acute care and multilevel care have quite distinct environmental needs, i.e., clinical versus residential. There must be sensitivity to this need by creating physical separation and by creating the appropriate ambiance and environment to reflect the characteristic needs of the two distinct programs.

Since the amalgamation of five organizations as part of the Nelson and Area Health Council there has been significant restructuring completed. This has resulted in an enhancement of such services as Human Resources, which now has dedicated skilled staff and the expansion of roles such as Pastoral Care to other sites. Staff with specific skills and knowledge have had a seamless opportunity to share this with other staff who can utilize this knowledge and skill, e.g., skin care, and foot care.

It is anticipated that the additional benefits will be realized with co - location, and will:

- eliminate travel time and vehicle operation costs between two sites;
- increase identification of employees with one organization;
- share cafeteria and food services with elimination of duplicate equipment;
- ease moving equipment within the site and sharing of some equipment;
- share and subsequently enrich Rehabilitation Services;
- eliminate cost of ambulance transfer between sites to the facility and/or the individual;
- further integrate Social Services;
- integrate Health Records and ease use via information systems; shared data base, elimination of duplication of information collectioni
- centralize Reception Services and reduce duplication of services;
- amalgamate bargaining units and collective agreements, providing an opportunity to restructure the work force that would not be possible on a site-specific basis, e.g. utilization of a clinical nurse specialist, dedicated volunteer coordinator, education coordinator;
- enhance opportunities to integrate service delivery in a seamless continuum.

Summary of economies of scale:

- Dietary and Food Services
- Cafeteria
- Parking
- Heat
- Maintenance
- Delivery of all utilities (hot water, steam, electricity, emergency power, telephone, switchboard, etc.)
- Central Purchasing, Storage, Shipping and or Receiving
- Linen Services

11.2 Existing KLRH Site

Following the development of the Health Campus, the existing KLRH will no longer be required as an acute care facility. HSG arranged for an independent assessment of the potential use for the vacated site[10].

The terms of reference were:

- To provide an estimate of the fee simple value of the old hospital site on the assumption that it is cleared of all buildings and asbestos (if present) and free of any environmental contaminants, and redeveloped under the provisions of the R-4 zoning category.
- To provide an estimate of the selling price of condominium apartment units, which could potentially be developed in portions of the old hospital building and provide an opinion on the target market based upon a review of the real estate market.
- To project a likely absorption rate of the potential condominium apartments in a renovation of the old hospital.

The conclusion of the fee simple valuation of the existing site was:

"the market value of the subject property's unencumbered fee simple interest as though vacant and unimproved and zoned R4 apartment residential, is reflected in the adjusted rate of $200,000 per developable acre (5.25 plus or minus acres) with a conceivable 10% dispersion: equals $950,000 - $1,150,000."

In considering the marketability of a building conversion into condominiums, the appraiser concluded:

"The hypothetical apartment condominium conversion, considering the property location, the assumed improvement quality, the view quality and the suite areas, will not appeal to families or active retirees because of the small unit sizes. Considering the potential to provide in-house social services and amenities akin to the congregate care/assisted - living residential models, the primary market targets are single seniors followed by senior couples and single adult empty nesters. Depending on the forecast absorption rate for self-ownership units, perhaps conversion to a multi-unit congregate care/assisted - living private pay senior's residence would represent a higher and better adaptive re-use of the obsolete hospital on part of the site with redevelopment of the adjacent surplus land to a mix of staged strata townhouses or stacked garden apartments depending on prevailing market conditions."

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[10] Parkhill, D. Restricted Appraisal Report Kootenay Lake District Hospital Site. December, 2000.

12.0 ESTIMATED COST

12.1 Program Level Capital Cost Estimate

The current estimated capital cost of the project, based on the Master Program, is shown in the table. These figures assume that the project is competed in two phases (see implementation plan). Escalated project costs are shown. Ministry of Health Project Cost Estimates (1553) are included in Appendices G and H.

Exhibit 44

Program Level Capital Cost Estimate

Item	Estimated Cost $
A. Land	-
B. Construction	$47,127,000
C. Professional Fees	$ 7,328,000
D. Furnishings & Equipment	$ 3,838,000
E. Municipal & Connection Fees	$ 1,225,000
F. Management & Overhead	$ 813,000
G. Project Contingency (2%)	$ 1,212,000
H. Payable Goods & Services Tax	$ 732,000
I. Total Project Cost	$62,275,000

12.2 Financing Sources

The acute care hospital construction will be financed jointly by the Ministry of Health (60%) and by the West Kootenay Boundary Regional Hospital District (40%). The WKBRHD has given approval in principle to financing this project. However, once the final project costs have been established, the RHD will be asked to confirm the funding they will contribute to this project.

Capital funding for the Multilevel Care Facility will be requested from the Ministry of Health.

Capital funding for the assisted - living units and the health professionals centre project will be explored with the private and non-profit sector.

12.3 Operating Cost Requirements Summary

The Pre - Construction Operating Estimate has been prepared based on the following assumptions:

- 86 multilevel care beds and 60 assisted - living units will be opened in 2004;
- 52 acute care beds will be opened in 2006;
- all estimates are in 2000 dollars.

Exhibit 45

Pre - Construction Operating Estimate

Projected Revenue	**2004/05**
Acute Care Services	23,840,121
Multilevel Care Services	4,638,940
Community - Based Services	3,286,746
Assisted - Living	2,137,380
Total	**$33,903,187**
Projected Expenditure	
Acute Care Services	12,244,306
Multilevel Care Services	3,675,912
Community - Based Services	4,407,674
Corporate Services	5,593,577
Support Services	9,674,567
Assisted - Living	2,145,965
Total	**$37,742,002**

The detailed PCOE can be found in Appendix D.

13.0 PROJECT MANAGEMENT AND GOVERNANCE

A project management and governance structure will be established to ensure the project is delivered on time, within the budget and with an uncompromised level of quality. The proposed project management controls and structures will be consistent with the capital plan requirements of the Ministry of Health and the capital project requirements of the Ministry of Finance and Corporate Relations. A Project Steering Committee will have overall responsibility for the delivery of the project. A Project Team will be responsible for completing the tasks associated with the project.

13.1 Steering Committee

The project will be governed by a Project Steering Committee and build on the relationships and work accomplished during the development of this Business Case. The Steering Committee will include representatives from the Nelson and Area Health Council, the West Kootenay Boundary Regional Hospital District, the Kootenay Boundary Community Health Services Society and the Ministry of Health.

The responsibilities of the Steering Committee include:

- manage all issues related to scope, schedule and budget
- advise respective governing bodies of project status
- direct and monitor Project Team activities to ensure they can meet project objectives
- audit and approve project outcomes
- ensure compliance with all statutory requirements

13.2 Project Management

A key part of the implementation strategy for a successful capital project is a comprehensive, multidisciplinary project management team led by an experienced project manager. Clearly defined roles and responsibilities for the project management team are necessary, with individual responsibility assigned for budget management, schedule management, quality control, contract management, communications and information management, etc.

The Project management Office (PMO) would include a team of individuals responsible for the timelines, including critical path and task schedules; management of work in progress; budget management and reporting; quality control; issues management; change order process; and internal project communications.

The PMO will facilitate teams of resources to accomplish project tasks. These teams will deliver the project elements and the PMO will coordinate their integration and ensure acceptable completion. The composition of various teams will be reviewed and updated from time to time by the Steering Committee as appropriate.

13.3 Project Controls

A number of project control processes will be established as part of the overall project management.

13.3.1 Budget Management and Reporting

Management and financial controls related to monitoring construction cost or managing cost overrun would include:

- financial controls (payments, holdbacks);
- management controls including documentation requirements, timing requirements, compliance with legislation;
- independent reviews including consultants reviews and recommendations; and
- maintaining contingencies.

Effective budget management will be required to ensure a full appreciation of project implications as decisions are made. The PMO will be responsible for tracking, forecasting and reporting on the budget. The PMO will provide regular updates to the team members and the Steering Committee. The PMO will also be responsible for highlighting budget issues early in the process so that they can be resolved and the project risk - managed.

13.3.2 Quality Control

Quality control will be a key function of the PMO throughout the life of the project. The PMO will participate in the design phases and ensure that the outcomes contribute to the project objectives. The PMO will play a lead role in the value analysis process, working with the funding agencies to achieve the best value for the building life cycle. Throughout construction, the PMO will provide ongoing management of materials and workmanship and ensure that any deficiencies are dealt with in an expedient way.

13.3.3 Contract Management

Regardless of the procurement method for construction, there will be a significant amount of contract management required on this project. Processes will be established for reviewing and signing contracts, receiving contracted service, assigning responsibility for co-ordinating service contracts, and for maintaining the quality of contracted services. Formal contracts for services to be provided will delineate, at minimum, the following:

- scope of services to be provided;
- qualifications of personnel;
- accountabilities of the firms;
- scheduling commitment and length of contract;
- description of physical facilities and/or equipment to provide the service;
- reporting relationships;
- requirement of the service to comply with legislated and accepted (de facto) standards, regulatory processes and codes;
- requirement that the contractor's policies and processes for the delivery of the service not be in conflict with organizational policies and/or processes;
- financial arrangements;
- liability insurance; and
- licensure and/or registration status of the service, if applicable.

13.3.4 Issues Management

A key element in ensuring the schedule is met is to have a well-defined and effective issues management process. Issues management will be a key responsibility of the PMO. Issues management includes the following:

- risk identification and monitoring for escalation;
- conflict management;
- risk mitigation strategies such as obtaining insurance, contracts; and
- taking corrective action by revising scopes as required and other remedies.

13.3.5 Change Order Process

There will be change orders throughout the life of this project and the successful completion of the project on time, within budget and with the required quality will be dependant on the ability to assess and make decisions on change orders very quickly. The Project Team will require clear guidelines from the Steering Committee on their authority to approve change orders.

13.3.6 Internal Project Communications and Reporting

The PMO will ensure that there is a comprehensive communication process within the project and with the NAHC. The NAHC will manage the external project communication process.

Organized and predictable reporting mechanisms are a critical part of project communications. The PMO will ensure that reporting on progress, delays, issues and dependencies will take place in a timely and reliable manner. The following types of reports may be used: milestone tracking, objective and scope tracking, regular budget reports, master project schedules, schedules, cash flow and regular status reports. Milestone charts that will be used include start and completion dates for the major deliverables, key internal and external reporting requirements, etc. Milestone charts will identify the timing of approval required at each phase.

13.3.7 Project Implementation Plan

An overall project implementation plan is provided in Section 14 of this document. This timeline will be expanded into a detailed schedule for the project at the beginning of the next phase. This detailed schedule will be managed by dedicated resources and reported on to the Project Team level, the Steering Committee and the governing and funding agencies (throughout the process).

The goal is to deliver in the least time and within the limits of the resources allocated for the project. Factors that affect the time and costs for this project are:

- Project Management – financial, obtaining information, timely decision making;
- Construction Management – tendering and management of the construction;
- Approvals – provincial and municipal;
- Design – extent of reprogramming, reuse of existing, delivery of documentation.

13.3.8 Independent Monitoring Process and Evaluation

There are several evaluation techniques for this project:

- project management structure that includes a Project Manager to co-ordinate all aspects of the project work to ensure comprehensiveness and fit between the various parties and activities. This project management approach will include a number of techniques to evaluate and mitigate risk. A key aspect is the documentation procedure and the evaluation of this documentation by the Project Team and the Steering Committee;

- establishment of a Steering Committee and a Project Team charged with the responsibility to put in place appropriate evaluation processes and to report these processes to the respective stakeholders through, at a minimum, a monthly report;
- the project management will follow the policies for conducting value analysis (VA) on provincially funded capital projects as described by the Capital Division, Treasury Board staff, Ministry of Finance and Corporate Relations;
- program VA undertaken by independent consultants and by the Ministry of Health staff to review the programs proposed to ensure fit for the community, region and between adjacent regions;
- functional programming and value analysis are combined to provide a comprehensive assessment of the facility requirements;
- independent quantity surveying and cost estimates at key stages;
- use of a risk management approach as described in this business case;
- VA conducted through a design charette or gaming process;
- VA conducted at the schematic design, design development and working drawings stage of the project;
- the Green Guidelines[11] will also be reviewed as part of each VA and individual checklist items will be considered where applicable and appropriate, as additional Standards Value Analysis Proposals (VAPs);[12]
- earned value management – where the work is monitored against what was done;
- planning for a post implementation review; as described in this document under Performance Indicators and as directed by Treasury Board;
- Treasury Board may reserve the right to appoint a Value Analysis consultant or prescribe a process to be undertaken for evaluation.

13.3.9 Approval Process

There will be various approval processes in place throughout the course of the project. Overall project approvals will be the responsibility of the Steering Committee. Government approvals will take place in accordance with the Capital Project processes and value analysis. Approvals of a more specific nature in the project will be managed through the Project Management Office and reported at regular intervals throughout the project.

13.4 Legal, Technical and Policy Aspects

The following describes the legal, technical and policy aspects that impact the project. These are limited and are described below.

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[11] Capital Division, Treasury Board Staff, Ministry of Finance and Corporate Relations, Province of British Columbia. Green Guidelines. June 2000 Edition.

[12] Capital Division, Treasury Board Staff, Ministry of Finance and Corporate Relations. Standard Value Analysis Proposals, Provincially Funded Facilities. June 2000 Edition.

Exhibit 46

Health Campus
Legal, Technical and Policy Aspects

Legislative Requirements	The project will comply with all of the relevant legislation.
Labour Issues	The project will create an opportunity for employment of a number of workers at about 10 people per million dollars of construction costs. The contractors on the project will be bondable and professional staff will be expected to adhere to the professional standards and codes of conduct. Also, this initiative will require a labour force possessing a relatively high standard of technical qualification and performance. Tthe Fair Wage policy will be in effect.
Aboriginal Affairs	The land is clear of aboriginal land claims.
Green Field Project	The project is relatively unfettered with pre-existing site conditions that could limit the range of development opportunities that are available to the Province.
Gender/Equity Considerations	Not applicable.
Federal/Provincial Relations	Not applicable.
Health Impacts	There will be an increase of 15 acute care beds and 86 multilevel care beds plus 60 assisted - living units.
Building Code Implications	The construction will comply with Building Code requirements and all other applicable building guidelines.

13.5 Performance Measures

The objective of this section is to identify quantitative performance measures against which the outcomes of the expenditure will be measured when the project is completed.

Performance measures can be used in two ways:

- to compare performance of the facility with other facilities or health authorities, and
- to compare changes in performance over time within the facility.

The following factors need to be taken into consideration when analysing performance results either between health authorities or between years of performance:

- population growth and ageing
- trends in need for care
- continued improvement in inpatient utilisation
- increased patient intensity
- increased self sufficiency or interdependence on other health authorities for services
- availability of community resources and supports
- delays in the ability to transfer patients who require care elsewhere.

13.5.1 Acute Care Services Performance Measures

The following measures can be used to benchmark performance:

- standardised separation rate/1000 population
- standardised patient day rate/ 1000 population
- alternate level of care days/1000 population
- average length of stay
- referral patterns – are residents leaving to seek services that are not offered in the NAHC? How many are leaving etc. Is the NAHC receiving patients from other health authorities and for what reasons?
- cost – what is the current cost per weighted case?[13]
- Infection control rates
- ratio of day care (ambulatory) spaces to inpatient spaces
- changes in waitlist
- bed occupancy
- patient moves in a 24 hour period
- number of people on surgical waiting list
- percentage of elective surgery performed as day surgery
- percentage of elective surgery admission on day of procedure
- electrical surgical waiting time
- percentage of elective surgery cancellations
- percentage of cases that are day surgery
- number of patients on waiting lists
- cancellation rates for day surgery
- surgical site infections
- post-surgical complication rate
- equipment failures
- mortality
- morbidity
- re-admission rates

13.6 Risk Management

The Risk Management component includes two separate but inter-related activities – risk assessment and risk management strategies. The identification and management of potential and actual risks includes the following steps:

1. identify all risks associated with the project
2. quantify the degree of risk or the potential impact of each risk
3. identify critical time periods when the risk is likely to occur
4. select appropriate strategies to address risk when it becomes visible
5. establish responsibilities for manageing risk
6. use appropriate channels to report risk experienced and action taken
7. evaluate how effectively potential or actual risks were managed

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[13] Ministry of Health. Health Authority Capital Plan Requirements. January 2000.

13.6.1 Types of Risks

A recent review of the Capital Management Process within the BC Government [14] proposed a risk framework with four types of risk:

Type of Risk	Description
General Risk	factors such as project visibility, public or environmental concerns, safety, etc.
Project Management Risk	related to the scope or complexity of the project, experience of the project team or degree of innovation i.e. has this type of project ever been done before?
Construction Risk	impact of labour disruption, natural occurrences such as inclement weather, etc.
Economic Risk	concerned with factors that affect the economic viability of the project – cost increases or possible withdrawal of funding

13.6.2 Quantifying The Degree of Risk/Potential Impact

The recent review of the capital management process suggested a potential framework for assessing risk. The risk framework is based on:

- the **probability** of individual factors becoming a problem; and
- the **extent of the impact** on the project.

For each risk factor, the probability and impact on the project are assessed to **classify the degree of risk** associated with the project e.g. low, medium or high risk. The Project Team identified nine potential areas of risk for this project.

Exhibit 47

Risk Assessment

Factor	Probability 0 – 3 low -> high	Weighting 0 – 3 low -> high	Result (Probability Impact)
High Visibility	3	3	6
Public Concerns / Objectives	2	3	5
Safety Issues	1	0	1
Size of Project	1.5	2	3.5
Complexity	1	1	2
Unclear or Changing Scope	3	N/A for now	3
Project Newness	1	1	2
Contractor Experience	1.5	1.5	3
Weather – Related Problems	1	1	2

See Appendix I for further information.

13.6.3 Responsibilities For Managing Risk

The responsibility for managing risks rests with the Steering Committee.

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[14] Adapted from "Capital Management Process Review For The Government Of British Columbia", Final Report, April 2000, Deloitte Consulting.

13.6.4 Reporting

The Steering Committee will use the appropriate channels to report any risk experienced and action taken as required by the respective stakeholders and as described in the Deloitte report and as required by Treasury Board.

13.6.5 Evaluating How Risks Were Managed

The Steering Committee will commit to a process to evaluate how effectively potential or actual risks were managed during the course of the project.

13.7 Communications Plan

The purpose of the Communications Plan is to ensure that the public and key stakeholders understand the concept of the new Health Campus, the rationale for its site and design, and the reasons for the delay in approval of the project.

Ministries/Agencies Affected:

- Nelson Area Health Council
- West Kootenay Boundary Regional Hospital District
- Kootenay Boundary Community Health Services Society
- Ministry of Health
- Ministry of Finance and Corporate Relations (Capital Division)

13.7.1 Communications Objectives

Ensure that target audiences understand and support the proposed Health Campus project, are aware of the planning and cost efficiencies offered by the partners, and believe that the project will be delivered on time and on budget.

13.7.2 Positioning Statement

While the need for new facilities in Nelson had been recognised for some time, the new realities of health care in B.C. required reassessment of plans to update the existing facilities.

The project being proposed for the Nelson Area Health Council takes into account changes in patient volumes, space and equipment needs and operating budget.

Planning a health campus is new for B.C.

The stakeholders will ensure an innovative, affordable facility that will be delivered on time and within the budget parameters established in the Business Case, that meets the NAHC's needs in the coming years.

13.7.3 Key Messages

The key messages are:

- This project is innovative and unique because:
    - better patient care is at the forefront of the Campus design;
    - the Campus will address local solutions to local problems;
    - it supports ageing -in-place within one Campus;

  - Nelson supports Trail as the Regional Referral Centre;
  - Nelson's Health Campus addresses the need for clients to have services close to home;
  - The Health Campus will focus on prevention and well-being;
- Health-care renewal is about making best use of health care dollars. To ensure full accountability to taxpayers, the Ministry of Health could not act on the Health Campus project until it had reassessed the project in light of the changes brought about by changes in health care.
- Key stakeholders including the Ministry, the NAHC and the Regional Hospital District determined that building the facilities on the Mount St. Francis site is the best option;
- The current proposal involves planning and development procedures that will ensure best value for the taxpayer's health-care dollar.

13.7.4 Target Audiences

There are both internal and external audiences who must be given information about this project.

Exhibit 48

**Nelson Area Health Council
Target Audiences**

Internal	External
NAHC board and staff KBCHSS board and staff WKBRHD board and staff MFCR, Capital Division staff MOH staff	Health authorities in the Kootenays Industry associations Health-care service providers/associations Advocacy groups Non-profit organizations Media MLAs General public

13.7.5 Strategies

Three types of strategies are proposed.

Targeted information
Some target audiences will require overview information; some require more detailed information; others such as industry groups will be interested only in the next steps.

Ongoing communications
A steady flow of information to the public and key stakeholders will keep them informed of progress. This creates a sense that the project partners are accountable within the stated time frame. NAHC willl ensure co-ordination of information among stakeholder organisations.

Visual identity
Recommend use of appropriate logos on all print materials.

13.7.6 Communications Materials

Project Announcement

- Event – speakers – photo opportunity
- Materials – speaking notes, media release, fact sheet, article, media liaison, interviews

Sustaining Activities

- Select media spokesperson
- Establish media liaison – local media, major Nelson media
- Progress bulletins
    - Internal – regular, consistent update distributed to NAHC, WKBRHD, MOH, KBCHSS
    - External – regular, consistent update to media, key stakeholders
- Project milestones – opportunities to create greater awareness
- Project visuals – photo opportunities for demonstrating construction efficiencies

13.7.7 Evaluation

The evaluation strategy is summarized in the table below.

Exhibit 49

Nelson Area Health Council
Evaluation of Communication Strategies

Activity	Responsibility
Monitor and evaluate media coverage	NAHC/MOH
Monitor stakeholder/industry publications	NAHC/MOH
Correspondence – respond to feedback from public, industry, stakeholders	NAHC/MOH

14.0 IMPLEMENTATION PLAN

14.1 Phasing Sequence

One of the positive outcomes in replacing Kootenay Lake Regional Hospital at a separate, new site, is the phasing-in sequence. The present site can continue to operate until the new site is completed. Once completed, the patients can be relocated from the old to the new site. This type of scenario is practical and feasible in that the redevelopment is made simpler and more user friendly. It is estimated that the construction period would be in the order of two to three years.

It is reasonable to assume that the new multilevel care facility must be constructed prior to the demolishing of Mount St. Francis Hospital. This would avoid the housing of residents in another building during the construction phase. The proposed redevelopment would include the building of a completely new building at an alternate location on the site. This would be preferred, as it would cause the least disruption to the resident population who could remain at the current site until such time as the new
structure is complete. The same would apply to Kootenay Lake Regional Hospital.

The proposed site allows for the construction of a multilevel care facility prior to the demolition of the old Mount St. Francis Hospital building. The construction of the acute care facility would occur after the multilevel care facility has been constructed and the existing Mount St. Francis Hospital building is demolished.

14.2 Implementation Plan

Based on the proposed phasing sequence, the implementation plan indicates that Phase 1 - Multilevel Care Facility will be substantially completed and moved in January 2004. The acute care facility is planned for move in June, 2006.

The schedule is based on the following assumptions:

Phase 1: Multilevel Care, Nutrition, Food Services, Material Management and Assisted - Living Housing Units

- Complete construction by December 2003
- Design and Documentation 16 months
- Construction 14 months

Phase 2: Acute Care and Community-Based Services

- Complete construction by March 2006
- Design and Documentation completed during Phase 1
- Construction 24 months

Exhibit 50

Implementation Plan

Task Name	Start Date	Completion Date
Approved to Proceed	March 7, 2001	March 7, 2001
Detailed Functional Programs	March 8, 2001	May 30, 2001
Appoint Consultants	May 31, 2001	June 13, 2001
Project Brief	June 14, 2001	December 26, 2001
Project Approvals	December 27, 2001	February 20, 2002
Working Drawings Phase 1	February 21, 2001	August 7, 2002
Working Drawing Approvals	August 8, 2002	September 4, 2002
Tender Award Phase 1 MLC & Food Services	September 5, 2002	October 16, 2002
Working Drawing Phase 2	October 17, 2002	May 14, 2003
Working Drawing Approvals	May 15, 2003	May 28, 2003
Complete Lease for Assisted - Living	September 5, 2002	October 16, 2002
Substantial Performance Phase 1	October 17, 2002	December 10, 2003
Commission MLC & Assisted - Living Units	December 11, 2003	January 7, 2004
Move in MLC & Assisted - Living Units	January 8, 2004	January 21, 2004
Demolish Existing Hospital	January 22, 2004	February 4, 2004
Tender & Award Phase 2 Acute Care Hospital	February 5, 2004	March 31, 2004
Substantial Performance Acute Care Hospital	April 1, 2004	March 29, 2006
Commission Acute Care Hospital	March 30, 2006	May 24, 2006
Move In Acute Care Hospital	May 25, 2006	June 7, 2006

APPENDICES

Appendix A

Summary of Planning Activities

Year	Activity
1991	A Master Plan and Component Requirements, which addressed the hospital's deficiencies and anticipated requirements, were completed. The report also contained an assessment of the structure, mechanical and electrical systems. [15]
1992	The Board of Kootenay Lake Regional Hospital recommended redevelopment of the hospital. The redevelopment plan involved building a new acute care services tower and renovating the existing building for other purposes. This recommendation was primarily based on a comparative analysis of the cost to renovate versus the cost to redevelop.
1994	A functional study of Mount St. Francis Hospital was conducted. The findings of this study indicated that the facility was functionally obsolete as most aspects of the building did not meet the multilevel care guidelines. Patient room areas were only half of the size required to meet the guidelines. The recommended option to address the identified issues was to build a new multilevel care facility on the undeveloped portion of the Mount St. Francis Hospital site.
1997	Nelson and Area Health Council submitted a capital proposal for the replacement of Kootenay Lake Regional Hospital and Mount St. Francis Hospital.
1999	Site Feasibility Study. February 1999.
1999	Master Plan For The Redevelopment of Kootenay Lake Regional Hospital and Mount St. Francis Hospital. August 1999.
1999	Service Analysis. September 1999.
1999	Observations and Issues on Population and Health Services. September 1999.
1999	Community Needs Assessment. September 1999.
1999	HMRG/KPMG. The Health Service Delivery Plan of the West Kootenay Boundary Health Planning Committee
2000	West Kootenay Boundary Health Service Plan

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[15] Cornerstone Planning Group Limited prepared this document in association with Tielker Sim Harrison Weller Architects, July 1991.

Appendix B

Steering Committee
Terms of Reference and Membership

1. Terms of Reference

Membership

The Steering Committee will include representatives from the Nelson and Area Health Council, the West Kootenay Boundary Regional Hospital District, the Kootenay Boundary Community Health Services Society and the Ministry of Health. The project management function will also be integrated into this group.

Responsibilities

The responsibilities of the Steering Committee include:

- manage all issues related to scope, schedule and budget;
- advise respective governing bodies of project status;
- provide direction to the Project Management Office;
- monitor the project to ensure project objectives are being met;
- approve past stages and propose for approval next stages to the governing bodies;
- communicate Board and Ministry decisions which may have a bearing on the project;
- resolve issues which can't be resolved within project working groups;
- audit and approve presentation of document/project;
- facilitate removal of barriers and obstacles within sphere of influence; and
- ensure compliance with all statutory requirements.

Responsibilities for specific areas of the project plan will be assigned to specific team members through the Project Management Office. The composition of various project teams will be reviewed and updated from time to time by the Steering Committee as appropriate.

2. Membership

Debbie Zeeben	Chair, Nelson Area Health Council
George Gillies	Chief Executive Officer, Nelson and Area Health Council
Evelyn Bradford	Chair, Kootenay Boundary Community Health Services Society
Martin Oets	CEO, Kootenay Boundary Community Health Services Society
Tamara Vrooman	Executive Director, Funding, Planning and Evaluation, Ministry of Health
Peter Van Rheenan	Executive Director, Regional Operations, Ministry of Health
Effie Henry	Director, Regional Programs, Ministry of Health
Diane Sirois	Senior Advisor Kootenays, Rural Development Office
Hans Cunningham	WKB Regional Hospital District
Lloyd McLellan	WKB Regional Hospital District
Larry Robinson	WKB Regional Hospital District
D. Robinson	Development Manager, Health Services Group BC Buildings Corporation

Appendix C

Vision, Mission, Values And Principles Of The Nelson And Area Health Council

We envision the Nelson & Area Health Council as a community in which we enjoy an optimal level of health and well-being. Therefore, the mandate of the Nelson & Area Health Council is as follows:

Vision: Better Health in the Kootenays

Mission: To sustain and improve health services and the health status of the residents in the Council area, through the development of partnerships with community organizations, stakeholders/other sectors.

Values and Principles

- Participation and Partnership – through representation, consultation, collaboration, coordination and communication with Council area residents, the Community Health Services Society and the Ministry of Health.
- Self-responsibility for Health – through education, and the promotion of healthy life styles and the appropriate use of health services.
- Accountability – through fiscal responsibility and effective and efficient public administration of the highest possible quality of health services.
- Equitable, Accessible, Affordable, Rational Service Delivery – through the provision of efficient, effective services that respond to community needs.
- Sensitive Implementation of Services – through respect for the citizens and caregivers.

Goals:

- Better health
- Effective and efficient management
- Public participation and responsibility
- Health care closer to home
- Barrier-free service delivery
- Equitable service delivery
- Holistic health
- Regional cooperation
- Preservation and protection of the health care system

Appendix D

Pre-Construction Operating Estimate

NELSON & AREA HEALTH COUNCIL
PCOE SUBSTANTIATION
PCOE - SUMMARY

	Estimates 2005 PCOE				2000/01 Budget PCOE		PCOE Change over 00/01 Budget	
Department/Area	**FTE's**	**Salaries**	**Other Costs**	**Total PCOE**	**FTE's**	**Total Cost**	**FTE's**	**Total Cost**
Acute Care (PCOE)	141.44	10,228,532	2,015,775	12,244,307	120.21	9,945,035	21.23	2,299,272
Long Term Care (2)	59.87	3,374,992	300,920	3,675,912	55.20	3,138,837	4.67	537,075
CBC (1)	64.36	2,949,267	1,458,407	4,407,674	56.65	3,682,541	7.71	725,133
Corporate Services (4)	68.60	4,253,593	1,339,984	5,593,577	53.96	4,540,460	14.64	1,053,117
Support Services (5)	108.19	5,989,704	3,684,863	9,674,567	76.14	6,361,411	32.05	3,313,156
Assisted Living (3)	34.88	1,712,865	433,100	2,145,965	-	-	34.88	2,145,965
Total PCOE	**477.34**	**28,508,953**	**9,233,049**	**37,742,002**	**362.16**	**27,668,284**	**115.18**	**10,073,718**
Other Areas								
Nelson Jubilee Manor				833,499		833,499		-
VHK				871,972		871,972		-
WillowHaven				2,457,659		2,457,659		-
All Other				530,384		530,384		-
Depreciation				1,541,280		1,541,280		-
Physician Rec&ret				1,970,459		1,970,459		-
EMCP Rural Physician				546,072		546,072		-
				46,493,327		**36,419,609**		**10,073,718**
Revenue				**REVENUE**				
Acute Care				23,840,121		20,232,706		3,607,415
Multi Level Care				4,638,940		4,261,352		377,588
CBS				3,286,746		3,006,592		280,154
Sub Total				**31,765,807**		**27,500,650**		**4,265,157**
Assisted Living				2,137,380		-		2,137,380
Net Expenses Over Revenue				**33,903,187**		**27,500,650**		**6,402,537**
Other Revenue								
Physician Rec&ret				1,970,459		1,970,459		-
Amortization				1,541,280		1,541,280		-
EMCP Rural Physician				546,072		546,072		-
All other Inc Donation				8,532,329		4,861,148		3,671,181
Total Revenu				**46,493,327**		**36,419,609**		**10,073,718**

NELSON & AREA HEALTH COUNCIL
PCOE SUBSTANTIATION *Priced in 2000 Dollars*
ACUTE CARE INFORMATION

				Estimates 2005 Substantiation						2000/2001 Budget Substantiation					
	Department/Area	Labour Distribution Code	Class Code	FTEs	Salaries	Benefits	Total Compensation	Other Costs	Total Budget	FTEs	Salaries	Benefits	Total Compensation	Other Costs	Total Budget
A)	Inpatient Units														
	Med/Peds/Transition Unit			*34.40*			*1,898,810*	*152,602*	*2,052,412*	*33.20*					*1,938,097*
	RNs			19.40	984,919	196,984	1,181,902			18.20	923,996	184,799	1,108,795		
	LPs			12.00	464,112	116,028	580,140			12.00	464,112	116,028	580,140		
	Ward Clerks			3.00	108,168	29,205	137,373			3.00	108,168	29,205	137,373		
				34.40	1,557,199	342,217	1,899,416	152,602	2,052,018	33.20	1,496,276	330,033	1,826,308	111,789	1,938,097
	Surgery			*13.14*			*916,070*	*61,154*	*977,224*	*11.24*					*748,531*
	RNs		21001	12.34	676,516	202,955	879,471			10.64	583,317	174,995	758,312		
	Unit Clerks		10104	0.80	29,021	7,836	36,856			0.60	21,765	5,877	27,642		
				13.14	705,537	210,790	916,327	61,154	977,481	11.24	605,082	180,872	785,954		
	Maternity			*8.07*			*518,035*	*34,077*	*552,112*	*8.07*					*562,149*
	RNs		21001	7.67	397,482	103,345	500,826			7.67	397,482	103,345	500,826		
	Unit Clerks		10104	0.40	14,510	3,918	18,428			0.40	14,510	3,918	18,428		
				8.07	411,993	107,263	519,256	34,077	553,333	8.07	411,993	107,263	519,256	42,893	562,149
	Intensive Care/Coronary Care Units			*10.50*			*731,300*	*57,612*		*10.50*					*771,780*
	Registered Nurses			10.50	554,117	177,317	731,434	57,612	789,046	10.50	543,617	163,085	706,701	65,280	771,981
B)	Surgical Inpatient and Day Care														
	O/R&PAR Sub Total			*12.82*			*805,720*	*432,077*	*1,237,896*	*9.57*					*857,773*
	RNs			8.04	422,124	139,301	561,425			9.57	502,454	165,810	668,263		
	LPNs			1.00	38,678	12,764	51,443			-	38,678	12,764	51,442		
	LPNs CSR			3.78	144,997	47,849	192,850			1.89	72,499	23,925	96,423		
				12.82	605,799	199,914	805,718	432,077	1,237,795	11.46	613,630	202,499	816,128	41,645	857,773
	DayCare Surgery**			2.00			196,844	25,746	221,789	1.50					165,743
	RNs			2.00	141,006	54,992	195,998	25,745	221,743	1.50	109,255	42,609	151,864	13,879	165,743
C)	*Emergency Services*			*12.33*			*788,120*	*135,589*	*923,709*	*11.83*					*851,311*
	RNs I			7.58	401,391	122,826	524,217			8.08	427,868	130,928	558,796		
	RNs II			1.00	62,359	20,578	82,937				62,359	20,578	82,937		
	Ward Clerks			3.75	136,035	44,892	180,927			3.75	136,035	44,892	180,927		
				12.33	599,785	188,296	788,081	135,589	923,670	11.83	626,262	196,398	822,660	28,651	851,311
	Patient Transport			0.00			6,500	15,525	22,025	-					20,000
				0.00			6,500	15,525	22,025				0	20,000	20,000
E)	Ambulatory Care Services														
	Stress Testing			0.80			59,041	10,988		0.80					66,591
	LPN			0.80	45,251	14,028	59,279	10,988		0.80	45,251	14,028	59,279	7,312	66,591
	Pulmonary functions			*1.50*			*75,000*	*4,234*	*79,234*	*0.50*					*28,000*
	Respitory Therapist			1.50	63,753	11,476	75,229	4,234	79,463	0.50	26,297	1,703	28,000	-	28,000
	Oncology			*1.50*			*103,125*	*18,310*		*1.00*					*81,750*
	RNs			1.50	81,891	21,292	103,183	18,310	121,493	1.00	56,594	15,846	72,440	9,310	81,750
	Ambulatory Care Clinics			*1.00*			*62,500*	*2,000*	*64,500*						
	RN			1.00	46,875	15,625	62,500	2,000	64,500	-					
	*Pre-Admission Clinic***			*0.50*			*0*	*1,000*	*1,000*	*0.50*					
	RN			0.50			0	1,000	1,000	0.50					
	*Diabetic Education ***			*3.00*			*234,167*	*14,790*	*248,957*	*1.80*					*151,900*
	RNs			3.00	178,185	55,237	233,422	14,790	248,212	1.80	106,911	33,142	140,053	11847	151,900
	Home IV			*0.00*			*5,000*	*25,227*	*30,227*	-					*22,700*
				0.00			5,000	25,227	30,227	-			-	22,700	22,700
	Clinical Education Nurse			*1.00*			*67,500*	*10,000*	*77,500*						
	RN			1.00	50,625	16,875	67,500	10,000	77,500	-					

		Labour Distribution Code	Class Code	Estimates 2005 Substantiation						2000/2001 Budget Substantiation					
	Department/Area			FTEs	Salaries	Benefits	Total Compensation	Other Costs	Total Budget	FTEs	Salaries	Benefits	Total Compensation	Other Costs	Total Budget
F)	Other Community Programs														
	Hospice			*1.00*			*52,535*	*0*	*52,535*	*1.00*					*52,535*
	Coordinator			1.00	39,402	13,133	52,535	0	52,535	1.00	39,402	13,133	52,535	0	52,535
	Early Mat Discharge			*0.50*			*37,904*	*1,669*	*39,573*	*0.41*					*32,346*
	RN			0.50	28,899	9,005	37,904	1,669	39,573	0.41	23,697	7,346.07	31,043	1,303	32,346
	Hostel Program			*0.00*			*0*	*12,000*	*12,000*	*0.00*					*10,500*
G)	Diagnostic Services														
	Laboratory			*18.50*			*1,331,731*	*765,837*	*2,097,568*	*15.00*					*1,633,958*
	Chief Lab Tech		32500	1.00	65,321	19,596.30	84,917			1.00	65,321	19,596.30	84,917		
	Med Tech I		32100	9.60	505,344	176,870	682,214			7.60	400,064	140,022	540,086		
	Med Tech II		32200	1.40	71,971	22,311	94,282			1.40	71,971	22,311	94,282		
	Med Tech IV		32400	4.50	271,080	94,878	365,958			3.00	180,720	63,252	243,972		
	Clerk V		10006	1.00	39,565	13,848	53,413			1.00	39,565	13,848	53,413		
	Lab Assistant II		15205	1.00	37,308	13,058	50,366			1.00	37,308	13,058	50,366		
				18.50	990,569	340,581	1,331,151	765,837	2,096,988	15.00	794,949	272,087	1,067,037	566921	1,633,958
	ECG Cardiac Diagnostic			*0.00*			*0*	*31,250*		-					*25,000*
	Regional Pathology			*2.50*			*864,687*	*36,471*	*901,158*	*2.00*					*669,645*
							703,282								
	Med Tech II		32200	2.00	102,816	31,873	134,689			1.00	51,408	15,936	67,344		
	Clerk V		10006	0.50	19,783	6,924	26,706			1.00	39,565	13,848	53,413		
				2.50	122,599	38,797	864,687	36,471	901,158	2.00	90,973	29,784	120,757	548,888	669,645
	Diagnostic Imaging														
	Xray:			*7.30*			*810,424*	*115,353*	*925,777*	*4.88*					*657,081*
							293,660								
	Med Radiographer Tech V		46500	1.00	64,032	22,411	86,443			1.00	64,032	22,411	86,443		
	Med RadioG Tech I		46100	3.60	185,400	64,890	250,290			2.08	107,120	37,492	144,612		
	Med RadioG Tech III		46300	1.70	97,080	33,978	131,058			0.80	45,685	15,990	61,674		
	Xray Clerk		10109	1.00	36,276	12,697	48,973			1.00	36,276	12,697	48,973		
				7.30	382,788	133,978	810,424	115,353	925,777	4.88	253,113	88,589	341,702	315379	657,081
	Ultrasound:						*165,400*	*35,650*	*201,050*						*176,9*
							165,400	35,650	201,050						176,94
I)	Support Services														
	Discharge Coordinator			*1.00*			*57,132*	*164*	*57,296*	*0.72*					*41,250*
	Social Worker			1.00	47,253	9,879	57,132	164	57,296	0.72	39,112	2,138	41,250	-	41,250
	Biomedical Engineering			*1.00*			*108,000*	*14,300*	*122,300*	*1.00*					*118,000*
	Med Equip Engineer			1.00	81,000	27,000	108,000	14,300	122,300	1.00	81,000	27,000	108,000	10,000	118,000
	Nursing Administration			*3.50*			*301,529*	*2,151*	*303,680*	*3.00*					*260,153*
	RNs			3.00	190,599	57,180	247,779			3.00	190,599	57,180	247,779	12,374	260,153
	DON			0.50	41,475	12,443	53,918				-				
				3.50	232,074	69,623	301,696	2,151	303,847	3.00	190,599	57,180	247,779	12,374	260,153

NELSON & AREA HEALTH COUNCIL - PCOE SUBSTANTIATION - COMMUNITY BASED SERVICES *Prices in 2000 Dollars*

Department/Area	Labour Distribut Code	Class Code	Estimates 2005 Substantiation						2000/2001 Budget Substantiation					
			FTEs	Salaries	Benefits	Total Compenstion	Other Costs	Total Budget	FTEs	Salaries	Benefits	Total Compensation	Other Costs	Total Budget
A) Community Based Services														
Nobody's Perfect			***0.50***			***1,828***	***3,958***	***5,786***	***0.50***					***5,270***
			0.50	1,800	28	1,828	3,958	5,786						
Club House			***1.00***			***39,902***	***17,161***	***57,063***	***0.88***					***49,238***
			1.00	34,696	5,204	39,900	17,161	57,061						
Community Support Worker			***1.50***			***37,498***	***9,754***	***47,252***	**1.60**					***48,480***
			1.50			37,498	9,754	47,252						
Special Needs			***1.50***			***105,911***	***11,224***	***117,135***	***0.53***					***47,182***
			1.50	82,011	23,783	105,794	11,224	117,018	0.53	28,977	8,403	37,381	9,801	47,182
CAPC Reg1 Programs			***0.40***			***14,358***	***145,710***	***160,068***	***0.57***					***147,180***
Cap Coordinator			0.40	12,355	2,003	14,358	145,710	160,068	0.57	26,751	3,500	30,251	116,929	147,180
CAPC Nelson Program			***0.30***			***10,374***	***3,396***	***13,770***	***0.30***					***13,327***
			0.30			10,374	3,396	13,770	0.30			13,327	0	13,327
Transportation Services			***6.00***			***227,313***	***115,783***	***343,096***	***3.59***					***236,690***
Transit Driver		80900	6.00	188,754	38,695	227,449	115,783	343,232	3.59	112,938	23,152	136,090	100,600	236,690
Pre/Post Natal			***2.00***			***77,664***	***28,299***	***105,963***	***2.00***					***102,272***
		23001	2.00	68,956	8,275	77,231	28,299	105,530	2.00	68,956	8,275	77,231	25,041	102,272
Prenancy Outreach			***2.00***			***88,246***	***40,989***	***129,235***	***0.83***					***72,265***
			2.00	73,984	14,057	88,041	40,989	129,030	0.83	30,703	5,834	36,537	35,728	72,265
Community Education			***3.50***			***154,208***	***30,753***	***184,961***	***3.04***					***160,682***
Education Coordinator		4080	1.00	49,575	5,949	55,524			1.00	49,575	5,949	55,524		
Soc Service Assistant I		15501	2.50	89,233	9,816	99,048			2.04	72,814	8,010	80,823		
			3.50	138,808	15,765	154,572	30,753	185,325	3.04	122,389	13,959	136,347	24,335	160,682
Broader Horizon			***5.00***	***172,573***		***172,573***	***94,843***	***267,416***	***4.83***					***249,178***
Director		4080	0.90	40,402	4,040	44,442			0.90	41,402	4,140	45,542		
Adult DayCare Worker		81100	2.20	66,199	6,620	72,819			2.20	71,199	7,120	78,319		
Volunteer Coordinator		10101	0.57	13,149	1,315	14,464			0.40	15,149	1,515	16,664		
Cook		80201	1.33	37,367	3,737	41,104			1.33	40,367	4,037	44,404		
Total BH			5.00	157,117	15,712	172,829	94,843	267,672	4.83	168,117	16,812	184,929	64,249	249,178
Home Support Programs			***32.50***	***1,465,879***		***1,465,879***	***277,261***	***1,743,140***	***31.10***					***1,643,830***
HS Coordinator		4080	0.80	43,259	10,815	54,074			0.80	43,259	10,815	54,074		
Clerk IV		10310	0.40	15,989	3,997	19,986			0.40	15,989	3,997	19,986		
Clerk V		10312	2.00	81,324	20,331	101,655			2.00	81,324	20,331	101,655		
Activity Worker		15003	1.00	39,157	9,789	48,946			1.00	39,157	9,789	48,946		
RN Supervisor		23001	1.00	49,799	12,450	62,249			1.00	49,799	12,450	62,249		
Field Supervisor		23001	1.00	49,799	12,450	62,249			1.00	49,799	12,450	62,249		
HS Worker	HHSU	B9989	26.30	892,938	223,234	1,116,172			24.90	845,405	211,351	1,056,756		
			32.50	1,172,265	293,066	1,465,331	277,261	1,742,592	31.10	1,124,732	281,183	1,405,915	237,915	1,643,830
Psychiatry Day program			***3.00***			***233,737***	***7,303***	***241,040***	***3.00***					***240,087***
Director of day Program		80008	1.00	67,623	19,611	87,234			1.00	67,623	19,611	87,234		
		21001	1.00	51,366	14,896	66,262			1.00	51,366	14,896	66,262		
		50300	1.00	62,751	17,570	80,321			1.00	62,751	17,570	80,321		
			3.00	181,740	52,077	233,817	7,303	241,120	3.00	181,740	52,077	233,817	6,270	240,087
Response System			***0.00***	0		***0***	***30,409***	***30,409***	-					***28,443***
Detail			0.00	0	0	0	30,409	30,409	-	0	0	0	28,443	28,443
Administration			***1.60***			***88,752***	***103,191***	***191,943***	***1.60***					***178,483***
CBS Administrator			1.60	75,439	13,313	88,752	103,191	191,943	1.60	75,439	13,313	88,752	89,731	178,483
Housekeeping			***1.00***			***39,997***	***17,810***	***57,807***	***1.00***					
Housekeeper			1.00	30,000	9,997	39,997	17,871	57,868						
Pharmacy			***2.04***	***156,000***		***156,000***	***520,590***	***676,590***	***1.04***					***443,750***
Pharmacist			1.00	63,450	19,670	83,120			0.40	27,095	8,399	35,494		
Pharm Tech			1.40	55,706	17,269	72,975			0.64	31,321	9,710	41,031		
			2.40	119,156	36,938	156,094	520,590	676,684	1.04	58,416	18,109	76,525	367,225	443,750
Physio Outreach Programs			0.52			***35,000***	***0***	***35,000***	***0.26***			***18,184***	***0***	***18,184***
Physio Therapist			0.52	32,000	3,000	35,000	0	35,000	0.26	17,000	1,184	18,184	0	18,184

NELSON & AREA HEALTH COUNCIL
PCOE SUBSTANTIATION
CORPORATE SERVICES/ADMINISTRATION

Priced in 2000 Dollars

			Estimates 2005 Substantiation						2000/2001 Budget Substantiation					
Department/Area	Labour Distribu Code	Class Code	FTEs	Salaries	Benefits	Total Compensation	Other Costs	Total Budget	FTEs	Salaries	Benefits	Total Compensation	Other Costs	Total Budget
A) Corporate Administration														
NAHC Administration	*Per PCOE*		7.00			659,898	175,176	835,074	9.00					1,012,891
Executive Staff	KEXE		9.00	0					9.00	679,620	168,820	848,440	164,450	1,012,890
2005 change			-2.00	526,023	133,875	659,898	175,176	835,074						
Total NAHC Admin			7.00	526,023	133,875	659,898	175,176	835,074	9	679,620	168,820	848,440	164,450	1,012,890
Foundation	*Per PCOE*		0.50			23,000	2,291	25,291	0.50					24,700
Foundation Total			0.50	19,550	3,450	23,000	2,291	25,291	0.50	19550	3450	23,000	1700	24,700
Chief of Staff	*Per PCOE*		1.00			48,000	50,000	98,000	1.00					73,000
Chief of Staff			1.00	48,000		48,000	50,000	98,000	1.00	48000		48,000	26000	74,000
H R/Personnel	*Per PCOE*		5.50			319,325	130,391	449,716	3.80					320,095
HR advisor	MHRE	6060	1.00	46,208	16,252	62,460			1.00	46,208	16,252	62,460		
HR advisor		6060	1.00	45,747	15,650	61,397			1.00	45,747	15,650	61,397		
Staffing Clerk		10312	1.00	39,565	15,074	54,639			1.00	39,565	15,074	54,639		
Staffing Clerk		10310	0.80	21,765	8,904	30,669			0.80	21,765	8,904	30,669		
Total HR for 00-01			3.80	153,285	55,880	209,165			3.80	153,285	55,880	209,165	110,930	320,095
Staffing Clerk		10310	0.40	14,510	9,002	23,512								
HR advisor		6060	1.00	45,747	13,313	59,060								
HR Assistant		10703	0.50	18,138	9,503	27,641								
HR Total 2005			5.50	231,680	87,698	319,378	130,391	449,769	3.80	153,285	55,880	209,165	110,930	320,095
Payroll	*Per PCOE*		3.50			213,100	1,667	214,767	2.00			184107	0	184,107
Director	MPAY	7030	1.00	55,500	19,497	74,997			1.00	55,500	19,497	74,997		
Payroll Officer		10703	1.00	36,276	15,083	51,359			1.00	36,276	15,083	51,359		
Payroll Officer		10704	1.00	39,565	16,546	56,111			1.00	39,565	16,546	56,111		
Payroll Total 00/01			3.00	131,341	51,126	182,467			3.00	131,341	51,126	182,467	0	182,467
Payroll Clerk		10703	0.50	20,200	10,437	30,637								
Payroll Total 2005			3.50	151,541	61,563	213,104	1,667	214,771	3.00	131,341	51,126	182,467	0	1
NAHC Education Committee	*Per PCOE*		0.50			28,000	47,923	75,923	0.00	0	0	0	41,550	41,550
Education Coordinator			0.50	20,124	7,876	28,000	47,923	75,923	0	0	0	0	41,550	41,550
NAHC Education Total			0.50	20,124	7,876	28,000	47,923	75,923	0.00	0	0	0	41,550	41,550
Office Services/Central Regi	*Per PCOE*		14.74			772,995	25,174	798,169	12.85					695,040
Office Services Worker	KCEN	10008	1.00	38,566	20,344	58,910			1.00	38,566	20,344	58,910		
Office Services Worker		10110	1.00	39,565	18,458	58,023			1.00	39,565	18,458	58,023		
Office Services Worker		10308	1.00	35,620	13,293	48,913			1.00	35,620	13,293	48,913		
Office Services Worker		10307	0.94	33,483	14,946	48,429			0.94	33,483	14,946	48,429		
Office Services Worker		10310	1.00	39,177	13,291	52,468			1.00	39,177	13,291	52,468		
Office Services Worker		10311	1.00	40,188	11,947	52,135			1.00	40,188	11,947	52,135		
Office Services Worker		10315	1.00	45,278	9,586	54,864			1.00	45,278	9,586	54,864		
Registry Clerk		10404	4.00	142,130	52,648	194,778			4.00	142,130	52,648	194,778		
Office Services Worker		10504	0.91	36,036	16,350	52,386			0.91	36,036	16,350	52,386		
Office Services Worker		15301	1.00	36,852	14,745	51,597			1.00	36,852	14,745	51,597		
Total Off Services - 00/01			12.85	487,896	185,608	673,503			12.85	487,896	185,608	673,503	21,537	695,040
Registry Clerk		10002	1.00	37,176	15,618	52,794								
Switchboard		10404	0.90	31,979	14,715	46,694								
2005 Office Serv Total			14.75	557,050	215,941	772,991	25,174	798,165	12.85	487,896	185,608	673,503	21,537	695,040

Department/Area	Labour Distrib Code	Class Code	Estimates 2005 Substantiation						2000/2001 Budget Substantiation					
			FTEs	Salaries	Benefits	Total Compensatio	Other Costs	Total Budget	FTEs	Salaries	Benefits	Total Compensatio	Other Costs	Total Budget
OH&S/Staff Nurse/Infectio	*Per PCOE*		**3.00**			**168,553**	**6,511**	***175,064***	***1.60***					**107,045**
Coordinator	OH&S	6025	1.00	55,631	10,481	66,112			1.00	55,631	10,481	66,112		
Assistant Coordinator		6099	0.60	20,000	3,783	23,783			0.60	20,000	3,783	23,783		
			1.60	**75,631**	**14,264**	**89,895**			**1.60**	**75,631**	**14,264**	**89,895**	17150	**107,045**
Infection Control		DC2	1.00	48,672	8,000	56,672								
OHS		6099	0.40	15,425	7,000	22,425								
Total OH&S			**3.00**	**139,728**	**29,264**	**168,992**	6,511	175,503	**1.60**	**75,631**	**14,264**	**89,895**	**17,150**	**107,045**
Financial Services	*Per PCOE*		***7.00***			***485,736***	***180,724***	***666,460***	**6.00**					**517,036**
Director			1.00	64,753	23,959	88,712			1.00	64,753	22,484	87,237		
Clerk VI			1.00	50,325	24,620	74,945			1.00	50,325	17,620	67,945		
Clerk IV			4.00	164,920	81,020	245,940			4.00	164,920	59,020	223,940		
Finance Total 00/01			**6.00**	**279,998**	**129,599**	**409,597**	**180,724**	**590,321**	**6.00**	**279,998**	**99,124**	**379,122**	**137,914**	**517,036**
Clerk VI			1.00	50,325	25,620	75,945								
Total 2005			**7.00**	**330,323**	**155,219**	**485,542**	**180,724**	**666,266**	**6.00**	**279,998**	**99,124**	**379,122**	**137,914**	**517,036**
Materiel Management	*Per PCOE*		***7.36***			***374,115***	***79,972***	***454,087***	***5.70***					**358,586**
Director	KMMM	3042	1.00	60,300	14,532	74,832			1.00	60,300	12,060	72,360		
Clerk IV	KMMM	10902	3.00	108,828	26,228	135,056			1.86	67,473	13,495	80,968		
Clerk VI	KMMM	10905	2.00	82,798	19,954	102,752			2.00	82,798	16,560	99,358		
Store Attendant IV	KMMM	17006	1.36	49,557	11,943	61,500			0.84	30,609	6,122	36,731		
Materiel Management Totals			**7.36**	**301,483**	**72,657**	**374,140**	**79,972**	**454,112**	**5.70**	**241,180**	**48,236**	**289,416**		**289,416**
Research & Utilization Ma	*Per PCOE*		***2.00***			***125,915***	***62,000***	***187,915***	***1.00***					***113,760***
Special Project Coordinat	KPLA	5020	1.00	62,979	14,375	77,354			1.00	62,979	27,911	90,890		
Assistant	KPLA		1.00	40,122	8,161	48,283			0.00			0		
Total Res & Utilization			**2.00**	**103,101**	**22,536**	**125,637**	**62,000**	**187,637**	**1.00**	**62,979**	**27,911**	**90,890**	**22870**	**113,760**
Health Records	*Per PCOE*		***10.50***			***626,388***	***35,521***	***661,909***	***6.71***					**429,317**
HR Administrator	KHRM		1.00	57,260	21,587	78,847			1.00	57,260	21,587	78,847		
HR Administrator			0.80	42,068	15,860	57,928			0.80	42,068	15,860	57,928		
Clerk IV			0.90	31,743	11,967	43,710			0.90	31,743	11,967	43,710		
Med Steno			3.00	120,703	45,505	166,208			3.00	120,703	45,505	166,208		
M R Technician			1.00	38,919	14,672	53,591			1.00	38,919	14,672	53,591		
			6.70	290,693	109,591	400,284	35,521	**435,805**	6.70	290,693	109,591	400,284	29,025	**429,309**
Clerk IV			0.64	21,873	8,246	30,119								
Med Steno			0.60	23,541	8,875	32,415								
M R Technician			1.00	38,219	14,409	52,628								
HR Administrator			1.66	81,091	29,871	110,962								
Health Records Total			**10.60**	**455,417**	**170,992**	**626,409**	**35,521**	**661,930**	**6.70**	**290,693**	**109,591**	**400,284**	**29,025**	**429,309**
Information/Systems	*Per PCOE*		***6.00***			***408,568***	***272,634***	***681,202***	***3.00***					**440,067**
Manager	KISM		1.00	58,459	12,817	71,276			1.00	58459	12817	71276		
Programmer		10512	2.00	108,860	24,516	133,376			2.00	108860	24516	133376		
			3.00	**167,319**	**37,333**	**204,652**	**272,634**	***477,286***	**3.00**	**167319**	**37333**	**204652**	**235783**	**440,435**
Programmer			3.00	167,290	36,774	204,064		204,064						
			6.00	**334,609**	**74,107**	**408,716**	**272,634**	**681,350**						
Communications	*Per PCOE*		**6.00**			***0***	***270,000***	***270,000***	***0***					**224,266**
Details							**270,000**							**224,266**

NELSON & AREA HEALTH COUNCIL
PCOE SUBSTANTIATION
SUPPORT SERVICES

Priced in 2000 Dollars

Department/Area	Labour Distributi Code	Class Code	Estimates 2005 Substantiation FTEs	Salaries	Benefits	Total Compenstion	Other Costs	Total Budget	2000/2001 Budget Substantiation FTEs	Salaries	Benefits	Total Compensat	Other Costs	Total Budget
A) Support Services														
Food Services			*25.50*		*0*	*1,376,233*	*620,580*	*1,996,813*	*21.52*					*1,898,283*
Manager			1.00	69,500	17,375	86,875			1.00	69,500	17,375	86,875		
FS Worker II		20005	2.00	31,957	9,587	41,544			2.00	31,957	9,587	41,544		
FS Worker 1		20001	11.52	350,116	105,035	455,151			11.52	350,116	105,035	455,151		
Cook III		20102	4.00	152,368	45,710	198,078			4.00	152,368	45,710	198,078		
Cook II		20107	2.00	37,609	11,283	48,892			2.00	37,609	11,283	48,892		
Dietitian II		30200	1.00	61,073	18,322	79,395			1.00	61,073	18,322	79,395		
			21.52	702,623	207,312	909,935			21.52	702,623	207,312	909,935	988,348	1,898,283
FS Worker 1			3.98	108,777	32,633	141,411								
			25.50	811,400	239,945	1,377,710	620,580	1,998,290						
Plant Maintenance			*12.00*			*743,406*	*238,242*	*981,648*	*10.50*					*866,702*
Maint Worker		13103	1.00	40,212	11,259	51,471			1.00	40,212	11,259	51,471		
Chief Power Eng 3		95230	1.00	52,393	14,670	67,063			1.00	52,393	14,670	67,063		
Maint Engineer A		95300	5.50	263,472	73,772	337,244			5.50	263,472	73,772	337,244		
Equip Eng Tech		95310	3.00	152,907	42,814	195,721			3.00	152,907	42,814	195,721		
			10.50	508,984	142,516	651,500			10.50	508,984	142,516	651,500	215,202	866,702
Maint Engineer A		95300	1.50	71,856	20,120	91,976								
			12.00	580,840	162,635	743,475	238,242	981,717						
Plant Engineering			*0.00*	*0*		*0*	*281,466*	*281,466*						*198,004*
Security			*2.00*			*102,700*	*5,000*	*107,700*						-
Security Guard			2.00	78,600	23,580	102,180	5,000	107,180						-
Housekeeping- LTC			*7.74*			*367,650*	*74,200*	*441,850*	*6.50*					
Housekeeping Aides		11001	6.50	230,575	80,701	311,276			6.50	230,575	80,701	311,276	-	311,276
Housekeeping Aides		11001	1.24	41,631	14,571	56,201				-				
			7.74	272,206	95,272	367,477	74,200	441,677						
Housekeeping- A/C			*12.00*			*567,317*	*44,520*	*611,837*	*9.32*					
HouseKeeping Sup		3030	1.00	55,813	16,744	72,557			1.00	55,813	16,744	72,557		
Housekeeping Aides			8.32	292,639	87,792	380,431			8.32	292,639	87,792	380,431		
			9.32	348,452	104,536	452,988			9.32	348,452	104,536	452,988		452,988
Housekeeping Aides			2.68	88,368	26,510	114,878								
			12.00	436,820	131,046	567,866	44,520	612,386						
Laundry/Linen			*17.00*			*916,898*	*781,974*	*1,698,872*	*13.6*					*1,277,030*
Director	KLDU	3045	1.00	55,080	12,118	67,198			1.00	55,080	12,118	67,198		
Laundry Worker 2		12002	10.60	413,103	157,765	570,868			10.60	413,103	157,765	570,868		
Laundry Worker 3		12101	2.00	81,554	30,913	112,467			2.00	81,554	30,913	112,467		
			13.60	548,737	200,796	750,533			13.60	548,737	200,796	750,533	526497	1,277,030
Total Laundry/Linen														
Laundry Worker 2		12002	3.40	115,505	50,646	166,151								
			17.00	665,242	251,442	916,684	781,974	1,698,658						

			Estimates 2005 Substantiation						2000/2001 Budget Substantiation					
Department/Area	Labour Distributi Code	Class Code	FTEs	Salaries	Benefits	Total Compenstion	Other Costs	Total Budget	FTEs	Salaries	Benefits	Total Compensat	Other Costs	Total Budget
Rehab Services														
Rehabilitation Services														
Rehab Admin/ NAHC (MSIP)			1.50			83,344	1,000	84,344	1.00					
Inpatients			2.50			138,906	5,000	143,906	3.61					289,481
Outpatients			4.00			222,250	11,000	233,250						
Pediatric O/P neuro			0.50			27,781	1,612	29,393						
Physio - LTC			4.80			266,702	1,000	267,702	0.50					24,000
Sub -Total P/T			***13.30***	-		***738,983***	***19,612***	***758,595***	***5.11***					***313,481***
Occupational Therapy														
Inpatients			1.00			50,810	5,000	55,810	0.67					48,775
Outpatients			1.00			50,810	4,590	55,400						
Outreach			0.40			35,417	670	36,087	0.37					30,834
Pediatric O/P neuro			0.50			25,405	3,000	28,405						
O/T - LTc			1.20			60,972	3,000	63,972						
Speech/Lang Path - LTC			0.40			20,324	2,000	22,324						
Speech/Language Pathology			0.20			10,162	2,000	12,162						
Sub -Total O/T			**4.70**	**0**		**253,900**	**20,260**	**274,160**	**0.97**					**79,609**
Total Rehab			**18.00**	**0**		**992,883**	**39,872**	1,032,755	6.08					393,090
P.T. IV		37500	1.00	66,468	9,970	76,438			1.00	66,468	9,970	76,438		
Nursing Assistant		15302	1.00	36,273	5,441	41,714			1.00	36,273	5,441	41,714		
P.T. I		37100	3.11	159,630	24,743	184,373			3.11	159,630	24,743	184,373		
			5.11	**262,371**	**40,154**	**302,525**			**5.11**	**262,371**	**40,154**	**302,525**	**10,956**	**313,481**
Nursing Assistant		15302	2.68	86,500	15,570	102,070								
P.T. I		37100	5.51	282,817	50,907	333,724								
			13.30	**631,688**	**106,631**	**738,319**	**19,612**	**757,931**						
			-											
O/T I		37100	0.97	49788	7,468	57,256			0.97	49,788	7,468	57,256	22,353	79,609
O/T I			3.00	171,984	48,155.52	220,140								
Nursing Assistant			0.73	27,941	6,147.13	34,089								
			4.70	**249,714**	**54,303**	**254,228**	**20,260**	**274,488**						
			18.00	**881,402**	**160,934**	**992,547**	**39,872**	**1,032,419**	6.08	**312,159**	**47,622**	**359,781**	**33,309**	**393,090**
						0		0						
creation/Activity Coordinator-LTC			***4.50***			***235,297***	***3,863***	***239,160***	***3.89***					***206,521***
Activity Worker I		15301	2.89	115,172	34,552	149,724			2.89	115,172	34,552	149,724		
Nursing Assist II		15305	1.00	41,257	12,790	54,047			1.00	41,257	12,790	54,047		
			3.89	**156,429**	**47,341**	**203,771**			**3.89**	**156,429**	**47,341**	**203,771**	**2760**	**206,521**
Activity Worker I			0.61	23,700	7,821	31,521								
			4.50	**180,129**	**55,162**	**235,291**	**3,863**	**239,154**						
Volunteer Coordinator			***1.00***			***45,000***	***2,000***	***47,000***						
Volunteer Coordinator		?	1.00	40,000	5,000	45,000	2,000	47,000						
Social Worker			***1.00***			***70,000***	***2,000***	***72,000***						
Social Worker		?	1.00	55,000	15,000	70,000	2,000	72,000						
Pastoral Services			***1.00***			***70,863***	***946***	***71,809***	***0.80***					***57,490***
Pastoral Care Coord		4050	1.00	55,000	15,863	70,863	946	71,809	0.80	48,264	8,687.52	56,952	538	57,490
						0		0						
Pharmacy IP - A/C			*4.25*			*330,373*	*1,353,400*	*1,683,773*	2.83					*1,298,791*
Pharmacy - OP			2.20			*171,083*	*236,800*	*407,883*	*1.10*					*165,500*
Total Pharmacy			***6.45***	***0***		***501,456***	***1,590,200***	***2,091,656***	***3.93***					***1,464,291***
Pharmacist Grade IV	KPHU	36400	1.00	79,952	27,983	107,935			1.00	79,952	27,983	107,935		
Pharm Grade II		36200	1.00	70,582	24,704	95,286			1.00	70,582	24,704	95,286		
Pharm Assist I		15401	0.93	36,814	12,885	49,639			0.93	36,814	12,885	49,699		
Pharm Assist II		15402	1.00	47,745	16,711	64,456			1.00	47,745	16,711	64,456		
			3.93	**235,093**	**82,283**	**317,376**			**3.93**	**235,093**	**82,283**	**317,376**	**1,148,915**	**1,464,291**
Pharm II			1.00	70,582	24,704	95,286								
Pharm Assist II			1.00	46,441	16,254	62,695								
Pharm Assist I			0.52	19,143	6,700	25,843								
			6.45	**371,259**	**129,941**	**501,200**	**1,590,200**	2,091,400						

NELSON & AREA HEALTH COUNCIL
PCOE SUBSTANTIATION
MULTILEVEL CARE INFORMATION

Priced in 2000 Dollars

				Estimates 2005 Substantiation						2000/2001 Budget Substantiation					
	Department/Area	Labour Distributi Code	Class Code	FTEs	Salaries	Benefits	Total Compensation	Other Costs	Total Budget	FTEs	Salaries	Benefits	Total Compensation	Other Costs	Total Budget
A)	MultiLevel Care Clients														
	Resident Care - PCOE			*59.87*	*3,374,982*	*0*	*3,374,982*	*300,930*	*3,675,912*	*55.20*					*3,138,837*
	Details														
	Registered Nurses			11.70	646,216	181,554	827,770			11.70	646,216	181,554	827,770		
	Head Nurses			2.00	121,928	26,731	148,657			2.00	121,926	26,731	148,657		
	DON			1.00	68,901	17,225	86,126			1.00	68,901	17,225	86,126		
	LPN			2.00	97,351	19,338	116,689			2.00	97,351	19,338	116,689		
	LT Care Aides			38.50	1,395,984	332,996	1,728,980			38.50	1,395,984	332,996	1,728,980		
	Total Details			55.20	2,330,378	577,844	2,908,222			55.20	2,330,378	577,844	2,908,222	230,550	3,138,772
	Registered Nurses			2.00	144,464	87,786	232,250								
	LPN			1.00	62,676	25,070	87,746								
	LT Care Aides			1.67	90,553	58,221	148,774								
				59.87	2,628,071	746,921	3,374,982	300,930	3,675,912						

Note: All other corporate and support services are reflected elsewhere - under Corporate Services & Support Services Sheets. Also, Activity workers & Pastoral care reflected elsewhere.

& AREA HEALTH COUNCIL
JBSTANTIATION
ASSISTED LIVING INFORMATION

Priced in 2000 Dollars

				Estimates 2005 PCOE				Estimates 2005 Substantiation						2000/01 Budget PCOE	
	Department/Area	Labour Distributio Code	Class Code	FTE's	Salaries	Other Costs	Total PCOE	FTEs	Salaries	Benefits	Total Compensatio	Other Costs	Total Budget	FTE's	Total Cost
A)	Assisted Living														
	Home Nursing-Prof			6.28	439,600		439,600								
	Home Support- nonProf			17.36	746,480	45,000	791,480								
							0								
	Total Assisted Living Units			*23.64*	*1,186,080*	*45,000*	*1,231,080*							*0.00*	*0*
H)	Rehabilitation Services														
	Physiotherapy			0.00	0	0	0								
	Occupational Therapy			0.00	0	0	0								
	Total Rehabilitation Services			*0.00*	*0*	*0*	*0*							*0.00*	*0*
I)	Support Services														
	Dietary			5.04	231,840	197,100	428,940							-	0
	Maintenance			0.63	37,170	172,000	209,170								
	Laundry			0.96	41,280	10,000	51,280								
	Housekeeping			2.93	125,775	5,000	130,775								
	Total Support Services			*9.56*	*436,065*	*384,100*	*820,165*							*0.00*	*0*
J)	Administration														
	Resident Manager			0.72	44,640	2,000	46,640							-	
	Business Office			0.96	46,080	2,000	48,080								
				1.68	*90,720*	*4,000*	*94,720*							*0.00*	*0*
Total Expenditures				*34.88*	*1,712,865*	*433,100*	*2,145,965*							*0.00*	*0*
Revenue:							Revenue								
	Resident Rents														
	MOH														
	2% Vacancy Factor														
Total Revenue															
Expenditure Over Revenue															

	2000/2001 Budget Substantiation				
Department/Area	FTEs	Salaries	Benefits	Total Compensa	Other Costs

NELSON & AREA HEALTH COUNCIL
PCOE SUBSTANTIATION *Priced in 2000 Dollars*
REVENUE

DRAFT #1

Department Area	2005 Projected Revenue	00/01 Budgeted Revenue	Change 2005 over 00/01
Laboratory	1,727,740	1,305,968	421,772
ECG	37,368	30,900	6,468
Regional Pathology	580,400	372,000	208,400
Imaging - Xray	440,000	320,100	119,900
Ultrasound	415,000	310,000	105,000
ER/MSP Revenue	150,000	144,100	5,900
General Inpatient/Outpatient	443,090	443,090	-
Regional Linen	1,056,000	961,988	94,012
Pharmacy	705,590	617,018	88,572
Other Revenue	1,506,266	1,506,266	-
MOH	16,778,667	14,221,276	2,557,391
			-
Sub Total	**23,840,121**	**20,232,706**	**3,607,415**
Multilevel Care			
Resident Per Diem	809,862	743,943	65,919
MOH	3,923,750	3,604,375	319,375
2% Vacancy Factor	(94,672)	(86,966)	(7,706)
Total Multilevel Care Revenue	**4,638,940**	**4,261,352**	**377,588**
Community Based Programs			
Nobody's Perfect	9,000	4,400	4,600
Club House	55,000	50,133	4,867
Community Support Worker	49,000	46,959	2,041
Special Needs	48,000	45,689	2,311
CAPC Reg'l Programs	155,000	147,181	7,819
CAPC Nelson Program			0
Transportation Services	260,000	244,444	15,556
Pre/Post Natal	112,000	111,586	414
Prenancy Outreach	52,000	48,225	3,775
Community Education	193,687	160,322	33,365
Broader Horizon	292,105	278,196	13,909
Home Support Programs	2,019,600	1,837,502	182,098
Response System	41,354	31,955	9,399
Total CBS Revenue	**3,286,746**	**3,006,592**	**280,154**
Assisted Living			
Resident Rents	648,000	0	648,000
MOH	1,533,000	0	1,533,000
2% Vacancy Factor	(43,620)	0	(43,620)
Total Assisted Living Revenue	**2,137,380**	**0**	**2,137,380**
Total Revenue	**33,903,187**	**27,500,650**	**6,402,537**

Appendix E

Kootenay Lake Regional Hospital

Physical and Functional Assessment

System or Component ID	System or Component Name	Performance VS. Client Requirement (per current usage) (rating scale in instructions)	Notes and Comments	Estimated Costs
Requires Major Renovation				
A220	Upper Floor Construction	3	Problems with Emergency entrance (Ambulance Ramp).	140,000
A240	Stair Construction	3	Handrails in some areas not to code.	20,000
A330	Windows	2	Many drafts through windows. Heat gain/loss is a major problem here.	
A340	Roof Covering	3	Was done 20 years ago. Must be redone again ASAP.	
A350	Projections	3	Eyebrows crumbling (noted in A320 as well).	
A360	Exterior Doors	2	Wooden, weathered and aged. Should be replaced.	20,000
A360 a	Handicap Access	2	Emergency has no opener. Shipping/receiving lacks access.	30,000
B100 a	Security/Locks	3	Keying revamp and card readers needed.	35,000
B120	Doors	3	Various deficiencies. Some too small, inadequate openers, limited handicap access.	80,000
C210	Service & Distribution	1	Currently being upgraded.	
C210 a	Unit Substation	1	Currently being upgraded.	
C210 b	Main Distribution	2	Some currently being upgraded.	
C210 c	Wiring	2	Some currently being upgraded.	
C210 d	Transformers	1	Some currently being upgraded.	
C210 f	Power Capacity	1	Some currently being upgraded.	
C211	Emergency Power	2	Recently upgraded. Still only delivers %55 of current demand.	
C230 f	Clocks	3	No master clock, not synchronized.	40,000
C230 g	Intercom	3	Intercoms - deficient, currently poor performance. Replacement/upgrade never costed.	40,000
D120	Mechanical Site Services	3	Irrigation system needs replacement.	60,000
D130	Electrical Site Services	1	Transformers contain PCBs. All being replaced under current	400,000

System or Component ID	System or Component Name	Performance VS. Client Requirement (per current usage) (rating scale in instructions)	Notes and Comments	Estimated Costs
			electrical upgrade.	
B310	Fittings, Fixtures & Trim	3	Major upgrading needed. See sheet?	
B310 a	Signage	3	Lacking, needs improvement/revamp.	50,000
B320	Equipment	3	Some requires replacement.	300,000
B330	Elevators	2	Upgrade needed. Not operable from emergency power, no Fireman features.	
B330 c	Elevator Security	3		
C120 b	Fire Alarm	2	Parts for replacement/repair no longer available. Recommend complete update.	250,000
C130 a	Air Circulation Rates, Volume	3	Major undertaking (addition of units, ducts, increase size of existing) to meet current standards.	50,000
C130 b	Peak Heating	2	Sufficient, even if ventilation rates are increased.	
C130 c	Peak Cooling	2	Dismal, no A/C save for a few window mounted units.	
			TOTAL	**$1,515,000**
Requires Major Modernization				
A330 c	Security/Locks	6		
B110	Partitions	5	Some sound transmission issues here.	
B210	Floor Finishes	4	Some should be redone within 3 years, some asbestos content	310,000
B230	Wall Finishes	5	Regular re-paint program. Some wallpaper in need of replacement.	
B230 a	Acoustics	5	Some areas are OK, some not.	80,000
C220 d	Lighting Colour Rendition	4	Being upgraded as failures occur.	60,000
C230 d	Cable/Educational TV	6	Poor shape. Currently being done by donations only.	50,000
C241 a	Nurse Call	4	Major upgrading required.	120,000
C241 c	Personal Alarm	5	Should be increased to cover other areas.	10,000
B340	Handicapped Lifts (fixed)	4	Some new required.	20,000
C110 b	Domestic Cold Water	4	Piping deterioration due to age/electrolysis. Major	

System or Component ID	System or Component Name	Performance VS. Client Requirement (per current usage) (rating scale in instructions)	Notes and Comments	Estimated Costs
			maintenance and/or replacement ongoing.	
C110 c	Domestic Hot Water	4	Exchange tank requires replacement.	30,000
Requires Major Modernization (Continued)				
C120	Fire Protection	6	Upgrade needed to meet current code.	180,000
C120 a	Sprinklers	6	Upgrade needed to meet current code.	100,000
C120 d	Extinguishing Systems	4	Lacking in some systems needed for kitchen area, elevator mechanical, etc.	75,000
C130	HVAC	5	No A/C (except for O.R). Ventilation rates (both outdoor air and exhaust) do not meet current standards.	
C130 e	Thermal Gradients	4	Large temperature differences, mostly due to lack of A/C, air circulation.	
C130 f	Zone Sizes	5	OK for heating (local valving). Non-existent for cooling.	
C130 g	Renovation Flexibility	6	Possible, but would have to be innovative to accommodate current structure (usually = costly).	
C131	Chillers	6	Just barely adequate performance (currently only for O.R.). Currently being replaced.	50,000
C150	Medical Gases	See Comments	All currently being upgraded to basic standards (no necessarily for best functionality).	1,200,000
C240 d	Security Alarms	See Comments	Requires upgrade, current system is shut down.	80,000
			TOTAL	**$1,085,000**
Requires Restoration				
A230	Roof Construction	7	Evidence of cracking on underside (ceiling finish).	
A300 a	Radiant Temp at Exterior	7	Wooden exterior doors/locks are weathered and aged.	
A320	Walls Above Grade	7	Walls OK, eyebrow projections are crumbling - Safety Hazard. Sapling in concrete, North-end.	
B220	Ceiling Finishes	9		
C110	Plumbing & Drainage	9	Currently at capacity, no room for expansion.	

System or Component ID	System or Component Name	Performance VS. Client Requirement (per current usage) (rating scale in instructions)	Notes and Comments	Estimated Costs
C220	Lighting, Devices	8		
C220 c	Lighting Switching	8		
C220 e	Lighting Reno Flexibility	8		
Requires Restoration (Continued)				
C230 b	Future Flexibility Capability	9		
C230 c	Telephone	9		
C240 c	Video	7	Requires upgrade, currently not in all necessary areas. Should be done immediately.	
D110	Site Development	8		
D110 a	Soft Landscaping (Green)	9		
C110	Plumbing & Drainage	9		
C110 d	Sewage Piping	9		
C140 b	Supply Air Temp Control	9		
			TOTAL	
			GRAND TOTAL	**$2,600,000**

Appendix F

Mount Saint Francis Hospital

Physical and Functional Assessment

System or Component ID	System or Component Name	Performance VS. Client Requirement (per current usage) (rating scale in instructions)	Notes and Comments	Estimated Costs
Requires Major Renovation				
A300 c	Security/Locks	3	Majority of locks are worn.	5,000
A330	Windows	1	Single pane w/wood frame, poor condition.	25,000
A340	Roof Covering	3	Must be redone.	65,000
A360	Exterior Doors	3	Replacement required, warp age, age/weather damage.	18,000
B100 a	Security/Locks	4	A few dedicated keypads. Most hardware requires upgrading/replacement.	30,000
B120	Doors	3	Most doors 6" too narrow, difficult to move beds/equipment.	
B210	Floor Finishes	3	Rooms are OK (Terrazo), Common areas in need of replacement (Corelon - some asbestos content)	
B310	Fittings, Fixtures & Trim	3	Many sinks, faucets, traps leaking, chipped/degrading coatings. Countertop laminates separating/chipping/cracking.	60,000
C110	Plumbing & Drainage	1	Many leaks on cold water and sewer lines, most likely due to age and electrolysis deterioration. Major replacement.	300,000
C110 d	Sewage Piping	1	Lines leaking, noted above (C110).	
C120 b	Fire Alarm	1	No smoke detectors in rooms/wards.	
C120 d	Extinguishing Systems	3	Only one system, serves kitchen ranges, substandard.	10,000
C130	HVAC	See Comments	Major Concern: Lack of ventilation/exhaust air, far below any standard.	200,000
C130 a	Air Circulation Rates, Volume	3	Inadequate, not distributed (halls only). Major changes required to meet standards.	
C130 c	Peak Cooling	2	No a/C. Unbearable temperature extremes in summer (especially upper floors).	

System or Component ID	System or Component Name	Performance VS. Client Requirement (per current usage) (rating scale in instructions)	Notes and Comments	Estimated Costs
Requires Major Renovation (Continued)				
C130 g	Renovation Flexibility	3	Space limitations and building construction severely limit options for upgrading/renovating.	
C220	Electrical	See Comments	Some areas require upgrading.	15,000
C241 c	Personal Alarm	3	Should look into, currently does not exist.	
D110 a	Soft Landscaping (Green)	3		
			TOTAL	$ 728,000
Requires Major Modernization				
A300 a	Radiant Temp at Exterior	4	Extreme heat gain/loss (especially SW exposure). Concrete walls, strapped w/plaster finish, no insulation.	
A350	Projections	6	Age deterioration. Requires constant patching/repairing.	
B100 a	Security/Locks	4		
B320	Equipment	5	Some laundry equipment in need of replacement.	
B330	Elevators	5	Upgrade to processors on hydraulics.	80,000
B340	Handicapped Lifts (fixed)	5	Two bath lifts in need of replacement.	50,000
C110 a	Fixtures	6	Not of energy/consumption saving design.	
C120	Fire Protection	4	Does not meet current codes.	50,000
C120 a	Sprinklers	4		
C130 d	Outside Air	5	Inadequate supply, does not reach all parts of building.	
C130 e	Thermal Gradients	5	Extreme , primarily due to wall construction (concrete, no insulation).	
C130 f	Zone Sizes	6	Heat zoning OK (by local valve). No air zoning.	
C133	Packaged air Handling Units	6	Two air makeup units, nearing the end of serviceable life. Consider replacement/upgrade in near future.	18,000
C210	Services & Distribution	6	No more capacity for extra load (I.e. - A/C).	

System or Component ID	System or Component Name	Performance VS. Client Requirement (per current usage) (rating scale in instructions)	Notes and Comments	Estimated Costs
C210 b	Main Distribution	5	Replacement/repair components no longer available should failure occur.	50,000
Requires Major Modernization (Continued)				
C210 f	Power Capacity	5	Current switchgear at maximum capacity	
C240 a	Physical Security	4		
C240 b	Electronic Access Systems	6		
C241 a	Nurse Call	4	Not to current standard.	80,000
C241 c	Personal Alarm	3		
D110	Site Development	See Comments	Only one road in/out.	50,000
D110 a	Soft Landscaping (Green)	5	No exterior patient area.	150,000
D140 a	Perimeter Fencing	5	No secure exterior area for dementia patients.	
			TOTAL	**$328,000**
Requires Restoration				
C110 b	Domestic cold water	7	Lines leaking, noted above (C110)	
C110 c	Domestic Hot Water	7	Tanks and lines OK.	
C130 b	Peak Heating	8		
C140 a	User Control	9		
C140 b	Supply Air Temp Control	9		
C220 c	Lighting Switching	8	Some require replacement, as/when required.	
C220 d	Lighting Colour Rendition	8	Various throughout. Should all be updated to T8 lamps.	12,000
C220 e	Lighting Reno Flexibility	7	Adding extra switches could prove problematic (solid wall construction).	
C230 a	Cabling Bandwidth Capacity	9	Category 5	
C230 c	Telephone	8	At capacity, OK for current use.	
C230 f	Clocks	9		
D120	Mechanical Site Services	8	Yearly maintenance problems.	150,000
D140 b	Site Lighting	9	OK, upgraded.	
			TOTAL	**162,000**
			GRAND TOTAL	**$1,218,000**

Appendix G

Project Capital Cost Estimates
Acute Care and Community-Based Services

1	FACILITY Nelson Health Campus		LOCATION Nelson, BC				STATUS ☑ Approval-in-principle ☐ Design Development ☐ Post-tender		
2	PROJECT New Health Campus - Acute Care and Community-Based Services						☐ Facilities Program ☐ Contract Document ☐ Revision ☐ Schematic Design ☐ Pre-tender ☐ Wrap-up		
3	PROJECT NUMBER 0	13/Feb/01	YR 2001	MTH March	DAY 1	EST'D COMPLETION	YR 2006	MTH March	DAY 31

	CATEGORY	NEW CONSTRUCTION	RENOVATIONS	REIMBURSABLES	GST	TOTAL CURRENT ESTIMATE	TREASURY BOARD APPROVAL	VARIANCE (> 0 = OVERRUN, < 0 = UNDERRUN)
4	BUILDING CONSTRUCTION	32,560,000	-		2,279,200	34,839,200	-	34,839,200
5	SITE DEVELOPMENT	500,000	-		35,000	535,000	-	535,000
6	SUPPLEMENTARY BUILDING COSTS	150,000	-		10,500	160,500	-	160,500
7	SUPPLEMENTARY SITE COSTS	200,000	-		14,000	214,000	-	214,000
8	CONSTRUCTION CONTINGENCY	1,002,300	-		70,161	1,072,461	-	1,072,461
9	ARCHITECT (FEES)	1,653,000	-	150,000	126,210	1,929,210	-	1,929,210
10	STRUCTURAL ENGINEER (FEES)	382,000	-	35,000	29,190	446,190	-	446,190
11	MECHANICAL ENGINEER (FEES)	597,000	-	50,000	45,290	692,290	-	692,290
12	ELECTRICAL ENGINEER (FEES)	405,000	-	35,000	30,800	470,800	-	470,800
13	QUANTITY SURVEYOR/VA (FEES)	159,000	-	10,000	11,830	180,830	-	180,830
14	DIETARY CONSULTANT (FEES)	-	-	-	-	-	-	-
15	LANDSCAPE ARCHITECT (FEES)	35,000	-	5,000	2,800	42,800	-	42,800
16	INTERIOR DESIGNER (FEES)	25,000	-	5,000	2,100	32,100	-	32,100
17	FOOD SERVICES CONSULTANT (FEES)	75,000	-	5,000	5,600	85,600	-	85,600
18	OTHER CONSULTANTS (FEES)	410,000	-	75,000	33,950	518,950	-	518,95
19	TESTING			95,000	6,650	101,650	-	101,
20	VA PROCESS (FEES)			140,000	9,800	149,800	-	149,800
21	PROJECT MANAGEMENT			960,000	67,200	1,027,200	-	1,027,200
22	ADMINISTRATION COSTS			243,985	17,079	261,064	-	261,064
23	LAND / SITE COSTS			-	-	-	-	-
24	LOCAL GOVT / UTILITIES / OFF SITE			795,000	55,650	850,650	-	850,650
25	OTHER COSTS			1,270,000	88,900	1,358,900	-	1,358,900
26	EQUIPMENT / FURNISHINGS			2,925,000	204,750	3,129,750	-	3,129,750
27	GST REBATE		83%	x	3,146,660	(2,611,728)	-	(2,611,728)
28	OTHER CONTRIBUTIONS			-		-	-	-
29	**TOTAL PROJECT COST**					45,487,217	-	45,487,217

OPERATING COST (first full year) = $ -

[illegible]					
FUNDING SOURCE				DISTRIBUTION	☐
C.O.A.	AMOUNT	[illegible]	[illegible]	[illegible]	☐
				[illegible]	☐
				[illegible]	☐
				PM	☐
				ADMIN	

CERTIFIED CORRECT:

FACILITY / HA / SD SIGNING AUTHORITY DATE

APPROVED:

PROJECT MANAGER DATE

MANAGER, PROJECT DELIVERY DATE

[illegible]

Appendix H

Project Capital Cost Estimates
Multilevel Care, Adult Day Care, Food Services & Material Management

1	FACILITY Nelson Health Campus	LOCATION Nelson, BC				STATUS ☑ Approval-in-principle ☐ Design Development ☐ Post-tender ☐ Facilities Program ☐ Contract Document ☐ Revision ☐ Schematic Design ☐ Pre-tender ☐ Wrap-up	
2	PROJECT Multilevel Care, Adult Day Care, Food Services & Material Management						
3	PROJECT NUMBER 0	13/Feb/01	YR 2001	MTH March	DAY 1	EST'D COMPLETION	YR 2004 · MTH January · DAY 31

	CATEGORY	NEW CONSTRUCTION	RENOVATIONS	REIMBURSABLES	GST	TOTAL CURRENT ESTIMATE	TREASURY BOARD APPROVAL	VARIANCE (> 0 = OVERRUN, < 0 = UNDERRUN)
4	BUILDING CONSTRUCTION	11,944,031	-		836,082	12,780,113	-	12,780,113
5	SITE DEVELOPMENT	250,000	-		17,500	267,500	-	267,500
6	SUPPLEMENTARY BUILDING COSTS	100,000	-		7,000	107,000	-	107,000
7	SUPPLEMENTARY SITE COSTS	50,000	-		3,500	53,500	-	53,500
8	CONSTRUCTION CONTINGENCY	370,321	-		25,922	396,243	-	396,243
9	ARCHITECT (FEES)	621,090	-	50,000	46,976	718,066	-	718,066
10	STRUCTURAL ENGINEER (FEES)	143,328	-	15,000	11,083	169,411	-	169,411
11	MECHANICAL ENGINEER (FEES)	223,951	-	20,000	17,077	261,027	-	261,027
12	ELECTRICAL ENGINEER (FEES)	152,286	-	20,000	12,060	184,346	-	184,346
13	QUANTITY SURVEYOR/VA (FEES)	59,720	-	5,000	4,530	69,251	-	69,251
14	DIETARY CONSULTANT (FEES)	-	-	-	-	-	-	-
15	LANDSCAPE ARCHITECT (FEES)	12,000	-	3,500	1,085	16,585	-	16,585
16	INTERIOR DESIGNER (FEES)	10,000	-	3,000	910	13,910	-	13,910
17	FOOD SERVICES CONSULTANT (FEES)	10,000	-	3,000	910	13,910	-	13,910
18	OTHER CONSULTANTS (FEES)	148,000	-	20,000	11,760	179,760	-	179,760
19	TESTING			40,000	2,800	42,800	-	42,800
20	VA PROCESS (FEES)			104,000	7,280	111,280	-	111,280
21	PROJECT MANAGEMENT			358,321	25,082	383,403	-	383,403
22	ADMINISTRATION COSTS			69,064	4,834	73,899	-	73,899
23	LAND / SITE COSTS			-	-	-	-	-
24	LOCAL GOVT / UTILITIES / OFF SITE			430,000	30,100	460,100	-	460,100
25	OTHER COSTS			442,000	30,940	472,940	-	472,940
26	EQUIPMENT / FURNISHINGS			913,000	63,910	976,910	-	976,910
27	GST REBATE			83% x	1,161,343	(983,915)	-	(983,915)
28	OTHER CONTRIBUTIONS			-		-	-	-
29	TOTAL PROJECT COST					16,788,040	-	16,788,040

OPERATING COST (first full year) = $ -

FOR BCBC USE ONLY					
FUNDING SOURCE				DISTRIBUTION	☐
C.O.A.	AMOUNT	[illegible]	[illegible]	[illegible]	☐
				[illegible]	☐
				[illegible]	☐
				[illegible]	☐
				[illegible]	

CERTIFIED CORRECT:

FACILITY / HA / SD SIGNING AUTHORITY DATE

APPROVED:

PROJECT MANAGER DATE

MANAGER, PROJECT DELIVERY DATE

Appendix I

Risk Assessment

Factor	Probability 0 – 3 0 being low; 3 being high	Weighting 0 – 3 0 being low; 3 being high
High Visibility Nelson and area communities are supportive and have been kept informed of the planning process.	Be aware of the high risk - the project is highly visible and the reaction of the public would be considerable if the project is not approved. Members of the community have conducted letter-writing campaigns to support the project. A public meeting is being planned to hear and address any outstanding concerns of the residents residing near the proposed site.	If it isn't well managed
Public Concerns / Objectives	Public concerns have been addressed by way of consultation and news bulletins.	This project has a 10-year history of planning. Public reaction will be negative if proposed schedule is delayed again.
Environmental Factors	The risk assessment has been done and to our knowledge, there are no negative impacts if we develop the land. Site analysis report supports suitability.	We do not anticipate environmental concerns to arise. If environmental factors were to arise it would have a high impact on the project
Safety Issues	Traffic, parking and maintaining site security are being addressed in the Master Plan. Adequate parking facilities are available and strict traffic control measures will be instituted.	Location of site is at close proximity to educational institution (Selkirk College)
Size of Project 32,325 sq. meters for all components of the Health Campus	During the construction project, the noise will be a factor. Every effort will be made to minimize noise factors. Pre-construction meetings will establish policies and guidelines	Construction workers from outside of Nelson may be required to meet work-related expectations required by the Project.
Legislative Changes	None anticipated. The Project is developed in conformity with recent legislation for capital projects.	
Complexity	Similar projects have been and are being constructed under these principles.	

Factor	Probability 0 – 3 0 being low; 3 being high	Weighting 0 – 3 0 being low; 3 being high
Unclear or Changing Scope i.e., Market Housing, Funding Sources, Business Case, Etc.		N/A for now
New Technology	Project will contain state of the art technology.	
Project Newness	Health Campus concept in this area is reasonably new.	
Project Manager Experience	Many years of experience in similar and larger projects will be required.	
Design Team Experience	Anticipates having an impressive record of accomplishment in large and complex projects.	
Contractor Experience	Not all governors and managers have experience in such large projects.	
Losing Momentum Through:		
Procedures	Procedures are followed	
Safety Issues	Precautionary measures are clearly articulated and monitored	
Aggressive / Changing Time Schedule	In collaboration with the design team, project manager and steering committee, changes may be made on sound basis.	
Labour Productivity Drop	This is not anticipated. A well-developed pre-construction agreement will be enacted.	
Availability of Skilled Trades	Within the West Kootenay region and other neighbouring community skilled tradesmen are available.	
Availability of Bondable Contractors	This is a requirement. Contractors are required to be bondable.	
Labour Disruptions	Not anticipated.	
Material / Equipment Availability	Readily available locally or can be obtained from neighbouring communities	
Weather – Related Problems	It is hoped that construction can begin in late summer thus completing outside work. Inside finishing can be done in the colder weather.	

Economic Risk	Project Funding Uncertainty	Once approval of the Business Case is completed, we anticipate project funding is made available.	
	Labour Cost Increases	This is difficult to determine, as workers will be members of various unions. However, a process would be developed to address this issue.	
	Material / Equipment Cost Increases	Unpredictable, however a contingency allowance is in place.	
	Currency Fluctuation	Allowance is made by way of contingency planning.	

Nelson and Area Health Campus

Nelson, British Columbia

PROJECT DEFINITION REPORT

The RPG Partnership / Health Services Group
February 2001

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INTRODUCTION

For the last decade, the Nelson and Area Health Council (and the governance organizations which preceded it) and the Ministry of Health have been discussing the replacement of two key health care institutions in Nelson, the Kootenay Lake Regional Hospital (KLRH) and the Mount Saint Francis Hospital (MSF). These discussions, and the assessments, studies and analysis that they have produced, have reached the stage where need, priority and the project and its parameters are clear and a decision to proceed is required. More recently, in July 2000, the Nelson and Area Health Council submitted a formal request to the Ministry of Health for Capital Project Funding for replacement of the two facilities. The Council was requested to prepare a Business Case to provide the information required by the Ministry of Health and the Ministry of Finance and Corporate Relations for approval and funding.

HEALTH CAMPUS VISION

The Nelson and Area Health Council (NAHC) has developed a vision for the provision of health and related services which emphasizes integration, cooperation and communication among consumers (patients, residents and clients) and service providers.

The NAHC realizes that implementation of this vision requires changing both operations (how we function) and physical facilities (where we function). NAHC believes the Health Campus will facilitate and catalyze the required changes.

The Health Campus is a place for the integrated and coordinated provision of acute care, diagnostic services, health practitioner visits, continuing care and residential care. The Health Campus would also serve as the administrative base for the provision of a range of community services. Furthermore, the NAHC vision of the Health Campus includes the provision of assisted-living housing in order to maintain the independence of persons in need of support.

NAHC believes that bringing the community together on a Health Campus will make the absolute best use of available resources to have the highest possible health status for its area residents. The benefits to be realized from the Health Campus are efficiency and effectiveness. Efficiency is the provision of services with the lowest possible consumption of resources. Effectiveness means the best possible increase in health status for persons utilizing the services offered on the Health Campus.

In late October 2000, the NAHC received approval and planning funds from the Ministry of Health to proceed with planning for the Health Campus with the first objective being to submit a Business Case, for consideration by the Ministry, early in February 2001.

This document serves as an appendix to the Business Case for this project and includes three major sections which are summarized below:

1 PROGRAM PARAMETERS

This section identifies key health program planning factors having a substantial influence on the development of the Health Campus Master Program, which follows.

Service Area

The primary catchment area for services delivered at the Health Campus will be Nelson and Area Health Council. The other CHCs of the West Kootenay Boundary Health Region (WKBHR) constitute the secondary catchment area for Health Campus-centred services.

Demography

The following table illustrates historical and projected populations for the Nelson and Area Health Council, West Kootenay Boundary Health Region and the Province of British Columbia. These projections were used for service utilization review and master programming purposes for the project.

	Population				Growth
	2000	2005	2010	2015	2000-2015
Nelson & Area CHC	29,313	31,045	33,996	37,073	26%
West Kootenay Boundary HR	82,758	85,422	89,293	93,239	13%
British Columbia	4,067,179	4,372,208	4,709,429	5,052,562	24%

Over the 15 years, from 2000 to 2015, the NAHC population is expected to increase 26% compared to 24% for BC and 13% for WKBHR. NAHC currently comprises about 35% of the population of the WKBHR, a percentage which is projected to rise to 40% by 2015.

Planning Horizon

Facility planning for the Health Campus will be based upon conditions estimated to exist in 2015. The year 2015 is used as the planning target, since this will accommodate 10 years of facility operation after a presumed opening in 2005. The projections in this document will also show the intervening years of 2005 and 2010.

Major Health Campus Activities

Four major activities have been identified for development at the new Health Campus site.

- Acute Care Services –includes functions currently offered at Kootenay Lake Regional Hospital (KLRH) Preventative and care services will respond to the health care needs of population groups served by the hospital (e.g., specific ethnic/cultural groups, the geriatric community, the chronically mentally ill, children and adolescents, etc.). The hospital will add a number of new programs to augment and enhance existing programs and to better rationalize service delivery on a regional basis and to reflect a 'closer to home' care philosophy while also maintaining strong inter-regional relationships with the other CHCs in the region to ensure timely and appropriate access to a full range of services.

- Continuing Care Services – includes a Multilevel Care Facility with functions, which are currently offered at Mount Saint Francis Hospital (MSFH). The new 86-bed MLC facility will be organized into 20-bed houses with several of the houses designed to accommodate residents with dementia. Each house will include food preparation, dining and activity space for 20 residents. An Adult Day Centre supporting a total of 30 clients with special programming and separate space accommodation for up to 10 dementia clients will also be provided. In addition, Assisted-Living Housing providing a supportive environment for persons who would benefit from appropriate, supportive non-institutional services will be offered in a housing complex which will comprise 60, 1-bedroom suites.

- Community Based Services - provides a range of NAHC and KBCHSS community based services such as home support, transportation, community education, mental health, continuing care and community health.

- Health Professionals Offices - offers medical and other health practitioners and health-related enterprises the opportunity to conduct operations on the Health Campus There will be 26 offices in total, with 18 physicians, 2 dentists and 6 health arts practitioners.

In addition, the four major activities above will be supported by retail and commercial activities including restaurant services, child day care, fitness facility, gift shop and other related outlets.

Outpatient Care

The NAHC will greatly expand its role in outpatient care by offering a comprehensive array of outpatient/day programs and community and social services responding to existing and future new care programs. These services will consolidate those services currently fragmented, expand a number of existing programs such as surgical day care, medical day care, diabetic day care, etc., and be enhanced with some new programs such as a renal dialysis unit and a metabolic education centre.

Acute Inpatient Care

The table below illustrates existing KLRH beds and the projected future health campus acute bed requirements to 2005, 2010 and 2015.

	Historical		Projected		
	97/98	98/99	2005	2010	2015
PATIENT DAYS					
Medical (incl Peds)	9,358	9,803	10,649	11,598	12,195
Surgical	2,177	2,551	2,628	2,862	3,009
Obstetrical	1,117	979	1,165	1,268	1,334
ICU/CCU	831	822	919	1,000	1,052
Total	13,483	14,155	15,360	16,729	17,590
BEDS					
Medical	28	28	32.8	35.7	37.5
Surgical	8	8	10.3	11.2	11.8
Obstetrical	6	6	4.9	5.3	5.6
ICU/CCU	3	3	4.7	5.1	5.3
Total	45	45	52.6	57.3	60.3
OCCUPANCY	82.1%	86.2%	80.0%	80.0%	80.0%

Residential Care

NAHC will respond to the shortage of appropriate residential care beds by developing a new multilevel care facility of 86 beds in conjunction with a 60-unit assisted-living housing complex on the Health Campus. These residential facilities will facilitate aging in place and will reduce the requirement for disruptive transfers.

Community Based Services

In order to provide integrated and coordinated services to the residents of the Region, the Health Campus is intended to be the base of operations for selected activities of the Kootenay Boundary Community Health Services Society and for those community based services currently provided by NAHC. Communication with the full range of care providers on the Campus will facilitate a more effective provision of patient, resident and client services.

Education

The NAHC will respond to the varied educational needs of patients, residents, clients, students and all health care workers. The Health Campus will host students from medical and nursing programs. Technical and professional trainees in the allied health disciplines will also be accommodated on-site for the practicum phase(s) of their curricula.

Research

Strong beliefs in the advancement of knowledge, aspirations to continually improve care practices, outcomes and overall health standards, and ready access to patients, residents, clients and comprehensive data bases promote support for the following types of research projects:

- epidemiological/statistical studies analyzing the incidence of health problems and patient population characteristics
- program/outcome evaluation
- clinical trials testing new procedures or innovative programs

2 MASTER PROGRAM

Space Summary

The building space summary in the table below tabulates the component gross areas square metres (CGSM) by service group as well as the building gross square metres (BGSM) for the building(s) as a whole that are included within the project. The area identified with an asterisk (*) has not been included in the Total Component Gross Area since it already reflects a building gross mark-up and they have not been included in the Grand Total Building Gross Area since they are areas that are likely to be funded through different or alternative sources.

Service Group	Gross Areas
A High/Medium Serviced Facilities (Post Disaster) B Low Serviced Facilities (Post Disaster) C Low Serviced Facilities (Non-Post Disaster) D Industrial/Shop Facilities (Post Disaster E Industrial/Shop Facilities (Non-Post Disaster)	5 108 582 5 217 1 164 1 701
Total, Component Gross Square Metres (CGSM)	**13 772**
Unassigned Gross Area (Incl. mech., ext. wall, major circulation, etc)	4 428
Total Building A Gross Area (Acute Care, Community Based Services)	**18 200**
Total Building B Gross Area (MLC/ADC)	**6 165**
Building Gross Area for C2, C4, C9 – C15, plus D3	(9 122) *
GRAND TOTAL BUILDING GROSS AREA	**24 365**

3 PROGRAM LEVEL CAPITAL COST ESTIMATE

The current estimated cost (in 2000 dollars) of the project, based on the Master Program contained herein, is as follows:

Item	**Estimated Cost $**
A. Land	0
B. Construction	47,127,000
C. Professional Fees	7,328,000
D. Furnishings & Equipment	3,838,000
E. Municipal & Connection Fees	1,225,000
F. Management & Overhead	813,000
G. Project Contingency (2%)	1,212,000
H. Payable Goods & Services Tax	732,000
I. Total Project Cost	**$62,275,000**

Note:
The Total Project Cost estimate is based on a total building gross area for the acute care, community based services, multilevel care and adult day centre portion of the Health Campus of 24 365 square metres.

For details on this estimate, refer to Section Three: Program Level Capital Cost Estimate.

INTRODUCTION

The purpose of the Program Parameters section of the Project Definition Report is to describe factors expected to influence future development of facilities at the Nelson & Area Health Council (NAHC) Health Campus site. Factors are organized according to whether they involve programs and services (Functional Parameters), systems and procedures (Operational Parameters), existing physical resources (Physical Parameters), or capital and operating funding (Financial Parameters).

Functional and operational parameters are used primarily in the development of master program information (gross estimates of accommodation requirements). A health facility's intended functional content and major operating systems affecting the manner in which these functions operate must be fully understood before they can be sized as discrete blocks of space. RPG refers to these blocks of space as "functional components" and these represent the major building blocks that will be used to construct models of future facilities in the physical planning tasks which occur later.

Physical and financial parameters are used primarily in the physical stages of planning where options regarding retention/reuse of existing facilities, construction of new facilities, and site development options are tested. Planning alternatives must be evaluated not only in terms of their "fit" within the confines of existing and proposed structures, but also within any established capital and/or operating budgets as well.

Collectively, the project parameters assist subsequent planning initiatives by describing proposed upper limits on:

- what services will be provided
- the number of "users" to be provided services
- what opportunities or constraints are imposed by the existing physical resources, including the site (and facilities if existing)
- what opportunities/constraints are imposed by any capital or operating funding objectives

The sections, which follow, are organized according to the four categories of program parameters, which appear in the following order:

- Functional Parameters
- Operational Parameters
- Physical Parameters
- Financial Parameters

THE NAHC HEALTH CAMPUS

The NAHC Health Campus concept will bring together on one site a wide variety of health and wellness activities. The co-location of the services on one site is intended to make the best use of shared resources and expertise. The components of the Health Campus can be grouped as follows:

- Acute Care Centre – to include functions currently offered at Kootenay Lake Regional Hospital (KLRH)
- Multilevel Care Centre - to include functions currently offered at Mount Saint Francis Hospital (MSFH)
- Assisted-Living Housing - to provide a supportive environment for persons who would benefit from appropriate, supportive non-institutional services
- Health Professionals Centre - to offer medical and other health practitioners and health-related enterprises the opportunity to conduct operations on the Health Campus

The poor condition of two key facilities operated by NAHC has made it imperative to consider the Health Campus concept at this time:

- KLRH is in need of replacement due to poor building condition and poor functionality to deliver efficient care.
- MSFH was not constructed to provide extended care and is unsuitable for the increasingly heavy care needs and psychogeriatric needs of its residents.
- Both facilities have safety issues which cannot be addressed without a major capital investment.

FUNCTIONAL PARAMETERS

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FUNCTIONAL PARAMETERS

This section of the report describes the proposed Nelson & Area Health Council Health Campus (NAHC/HC) in terms of the nature and extent of inpatient, outpatient, long term care, emergency and community services as well as the NAHC's proposed roles in community outreach, education, and research. The presence of non-clinical services and their impact on facility planning are acknowledged, but the scope of these is understood to be driven primarily by clinical workloads. Clinical functions are the key generators of activity and it is these that will have the most material influence on the nature and extent of all services to be accommodated at the site. Consequently, in this stage of the planning work, most of the attention is focused on clinical services that are typically viewed as major generators of activity on the Health Campus.

NAHC VISION, MISSION AND STRATEGIC DIRECTIONS

Philosophical positions, such as those conveyed by mission and vision statements represent ideal and ultimate standards adopted by Council against which performance is assessed. They may not, however, be fully sensitive to detailed constraints and opportunities imposed by the sites, existing facilities, and current economic conditions.

The following statements were prepared by the NAHC to illustrate fundamental positions on health and the provision of care to all users of the health system.

"VISION, MISSION, VALUES AND PRINCIPLES OF THE NELSON AND AREA HEALTH COUNCIL

We envision the Nelson & Area Health Council as a community in which we enjoy an optimal level of health and well-being. Therefore, the mandate of the Nelson & Area Health Council is as follows:

VISION:

Better Health in the Kootenays

MISSION:

To work within provincial and regional frameworks to sustain and improve health services in the Council area.

VALUES AND PRINCIPLES

Participation and Partnership -- through representation, consultation, collaboration, coordination and communication with Council area residents, the Community Health Services Society and the Ministry of Health.

Self-responsibility for Health -- through education, and the promotion of healthy life styles and the appropriate use of health services.

Accountability -- through fiscal responsibility and effective and efficient public administration of the highest possible quality of health services.

Equitable, Accessible, Affordable, Rational Service Delivery - through the provision of efficient, effective services that respond to community needs.

Sensitive Implementation of Services -- through respect for the citizens and caregivers.

GOALS:

Better health

Effective and efficient management

Public participation and responsibility

Health care closer to home

Barrier-free service delivery

Equitable service delivery

Holistic health

Regional cooperation

Preservation and protection of the health care system"

Key Vision Statements Regarding the Health Campus

The following is a draft prepared by NAHC outlining its vision for the Health Campus in Nelson:

"The Nelson and Area Health Council (NAHC) has discovered a vision for an innovative approach to health care. Its initial premise is to move away from the concept of 'health care,' to 'wellness.' This subtle change of wording immediately shifts the emphasis from 'receiving care' to 'individual wellness.' With this shift, a prevention focus evolves and moves away from the traditional model of 'cure or care.' Within the aim for community wellness, the concept of a Health Campus was born.

'Health Campus' conceptualizes studying wellness or health education as opposed to provision of care. Although it is obvious that care will still be required, the Health Campus model will move the community collectively and individually to a 'wellness' and prevention focus. This shift to individual responsibility for wellness will begin to address the longstanding pressures of illness in community citizens and on our health care system. At present, the Ministry of Health and health authorities are charged with the overwhelming responsibility of addressing illness and care issues driven by an aging population and increasingly complex illnesses. The shift to a prevention focus should change long term outcomes and decrease illness acuity and complexity. "Better health in the Kootenays" will be the outcome, resulting in an ease of pressure within the health care system.

Thus, planning for the Health Campus for Nelson and area has commenced to replace two aging health care facilities. While aiming at responding to community need and focusing on seamlessness of care, the planning for the Health Campus has been multifaceted. Therefore, there are cross references between long term care, acute care, outpatient services, community based services, assisted-living and the community wellness centre. Within this unique model, the plan is to physically draw together all of the levels of care upon one campus. This physical connection will immediately improve access to services and streamline support services with obvious resulting efficiencies. With the focus on wellness, there is a shift to alternate approaches including an outpatient services unit and community wellness centre."

SERVICE AREA

The primary catchment area for services delivered at the Health Campus will be the Nelson and Area Health Council. The other CHCs of the West Kootenay Boundary Health Region constitute the secondary catchment area for Health Campus-centred services. The third level of catchment is persons from other parts of BC, out of province and out of country.

HEALTH SERVICE DELIVERY PLAN

The Project Definition Report has been guided by "The Health Service Delivery Plan of West Kootenay Boundary Health Planning Committee", prepared by HMRG/KPMG in 1999.

The organizational participants in the West Kootenay Boundary Health Planning Committee are:

- Nelson & Area CHC
- Arrow Lakes/Upper Slocan Valley CHC
- Boundary CHC
- Castlegar & District CHC
- Greater Trail CHC
- Kootenay Boundary Community Health Services Society (KBCHSS)
- West Kootenay Boundary Regional Hospital District (RHD)

In particular, statements on the respective roles of the various organizations and facilities of the participants were attempted to be adhered to in the drafting of this document.

PLANNING HORIZON

Facilities programming for the project will be based on the status of conditions as estimated to the year 2015.

The year 2015 will be used as the planning target, since this will accommodate 10 years of facility operation after a potential opening in 2005. The projections in this document will also show the intervening years of 2005 and 2010.

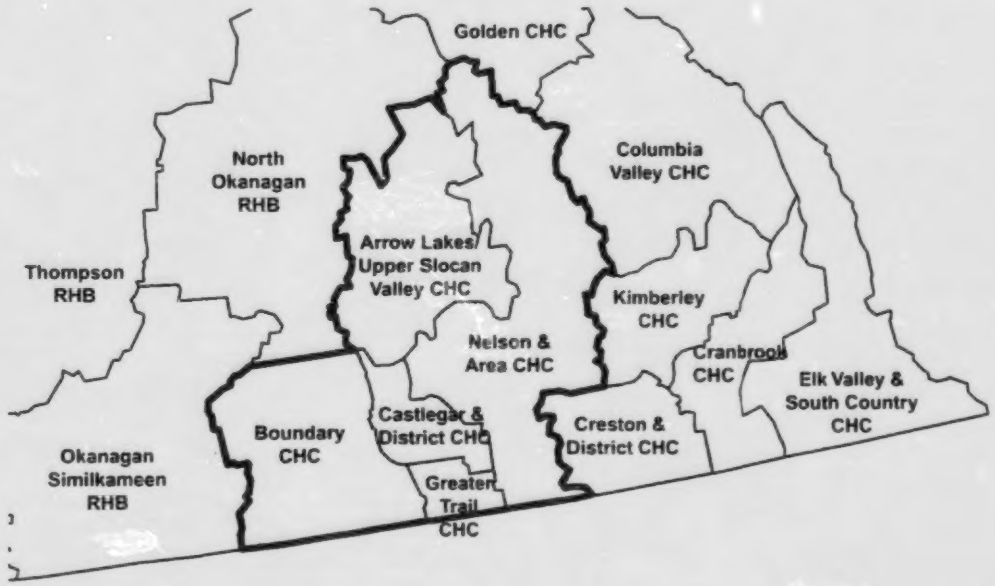
GEOGRAPHY

As noted above, Nelson Area Health Council (NAHC) participates in the West Kootenay Boundary Health Planning Committee and is part of the West Kootenay Boundary Health Region. The same five CHCs participate in the WKB Planning Committee and are part of the Kootenay Boundary Community Health Services Society (KBCHSS) and the West Kootenay Boundary Health Region (WKBHR).

The WKB Health Region includes the following health authorities (CHCs) and is displayed in colour in Figure 1 below:

- Nelson & Area CHC
- Arrow Lakes/Upper Slocan Valley CHC
- Boundary CHC
- Castlegar & District CHC
- Greater Trail CHC

Figure 1 - West Kootenay Boundary Health Region


Golden CHC
North Okanagan RHB
Columbia Valley CHC
Arrow Lakes/ Upper Slocan Valley CHC
Thompson RHB
Kimberley CHC
Nelson & Area CHC
Cranbrook CHC
Elk Valley & South Country CHC
Castlegar & District CHC
Boundary CHC
Creston & District CHC
Okanagan Similkameen RHB
Greater Trail CHC

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POPULATION HIGHLIGHTS

Master planning and programming work for the Health Campus project will be based on the historical and projected population statistics presented in this section.

The primary catchment area for services delivered at the Health Campus will be Nelson and Area Health Council. The other CHCs of the West Kootenay Boundary Health Region (WKBHR) as listed above constitute the secondary catchment area for Health Campus-centred services. Accordingly, the populations presented in this section are for these CHCs.

Population Projections

The last census of Canada was in 1996. BC Stats (Ministry of Finance and Corporate Relations) produces a document which has population estimates for BC for the years 1997 to 1999 and projections from the year 2000 to 2026. The document is entitled PEOPLE, of which the latest version is 25. Unless otherwise indicated, all population data in this document is from PEOPLE 25.

West Kootenay Boundary Health Region Population

NAHC currently has a population of about 30,000 which is 35 percent of the population of the WKBHR population. This percentage is projected to rise to 40 percent by the year 2015.

Figure 2: Population of the CHCs of the WKBHR, 2000 & 2015

CHC	2000		2015	
	Population	% of WKBHR	Population	% of WKBHR
Nelson & Area CHC	29,313	35%	37,073	40%
Arrow Lakes/Upper Slocan Valley CHC	5,397	7%	5,809	6%
Boundary CHC	13,227	16%	14,527	16%
Castlegar & District CHC	13,892	17%	14,471	16%
Greater Trail CHC	20,929	25%	21,359	23%
Total	82,758	100%	93,239	100%

WKBHR Population Growth Projection

NAHC is the projected to be the fastest growing CHC in the WKBHR. The projected increase in population is 26 percent in the next 15 years. This rate of growth identifies NAHC as being unique in the WKBHR.

Figure 3: Projected Population Growth, CHCs of the WKBHR

CHC	Population Growth			
	2000-05	2005-10	2010-15	**2000-15**
Nelson & Area CHC	6%	10%	9%	**26%**
Arrow Lakes/Upper Slocan Valley CHC	2%	3%	2%	**8%**
Boundary CHC	3%	3%	3%	**10%**
Castlegar & District CHC	2%	1%	1%	**4%**
Greater Trail CHC	1%	0%	1%	**2%**
Total	3%	5%	4%	**13%**

WKBHR Age Distribution

The age distribution of all the CHCs of the WKBHR and BC is similar:

Figure 4: Age Distribution, WKBHR, 2000

CHC	Age Group				
	0-14	15-44	45-64	65-74	75+
Nelson & Area CHC	17%	42%	27%	7%	6%
Castlegar & District CHC	18%	43%	26%	7%	6%
Arrow Lakes/Upper Slocan Valley CHC	18%	38%	29%	9%	7%
Greater Trail CHC	17%	40%	26%	9%	9%
Boundary CHC	16%	37%	28%	11%	7%
Total WKBHR	**17%**	**41%**	**27%**	**8%**	**7%**
BC	**18%**	**45%**	**24%**	**7%**	**6%**

Figure 5: Age Distribution, WKBHR, 2015

CHC	Age Group				
	0-14	15-44	45-64	65-74	75+
Nelson & Area CHC	15%	37%	31%	10%	6%
Castlegar & District CHC	14%	36%	30%	11%	8%
Arrow Lakes/Upper Slocan Valley CHC	14%	35%	30%	12%	10%
Greater Trail CHC	14%	35%	31%	11%	9%
Boundary CHC	14%	32%	31%	13%	11%
Total WKBHR	**15%**	**35%**	**31%**	**11%**	**8%**
BC	**15%**	**39%**	**30%**	**9%**	**7%**

MAJOR ACUTE/REHABILITATION CLINICAL SERVICE ROLES

Acute care clinical services will be consolidated on the Health Campus site. The Health Campus will provide primary and secondary care for both inpatients and outpatients.

The following subsection identifies "platform" and major specialty clinical service roles assumed for the Health Campus site.

Anesthesiology

Anesthetists at the Health Campus will administer general anaesthetics and nerve blocks in support of procedures conducted in the:

- Surgical Suite
- Maternity Unit
- Diagnostic Imaging Department (interventional procedures)
- Outpatient Services (day care surgery)

The day-to-day operation and maintenance of anaesthesia equipment will be performed by anesthetists supplemented by assistance from respiratory therapists, with annual preventive maintenance provided by Regional Biomedical Engineering.

Outpatient services will focus on pre-admission/operative assessments and acute pain management. Anaesthetists will also participate in the delivery of chronic pain management in outpatient care.

Emergency Medicine

The Health Campus site will continue to provide emergency care for residents of the NAHC and the region. The site will be capable of responding to unscheduled patients presenting with a wide range of conditions and illnesses with a continued increase in activity. Walk-in (i.e., all non-ambulance arrivals) traffic, however, is expected to become more selective in their choice of treatment centre. The Health Professionals Office located on the Health Campus site is expected to accommodate a significant percentage of walk-in patients.

Psychiatric patients will continue to be received in the Emergency Department. The primary objective in treating this group of patients will be rapid evaluation by a mental health professional, followed by either admission to the medical inpatient unit or referral to the appropriate hospital or community based service(s). Secured holding facilities will be provided for those requiring short-term holding and assessment.

Emergency will play a role in maximizing appropriate use of inpatient resources. Careful screening of patients in the Emergency Department will ensure that only those in need of inpatient care will be admitted.

Family Medicine

Family Medicine will offer family-oriented care at the Health Campus site. The availability of specialists in NAHC is limited and will promote daily inpatient care by family practitioners with referrals to specialists as necessary. It will also promote the involvement of family practitioners in specialty services commensurate with the interests and training of individual physicians. Specialty services identified as potential for more substantial involvement include low risk obstetrics, palliative care, and geriatric assessment services.

Outpatient Family Practice will have a presence on the Health Campus site, however the vast majority of Family Practice outpatient care occurring in the NAHC will continue to be in private physicians' offices either on the Health Campus or off-site.

Medicine

The NAHC will continue to develop medical subspecialty expertise to meet the clinical role of the Health Campus.

Medical subspecialties based at the Health Campus site include Internal Medicine, Respirology and Neurology. Critical Care Medicine to support the intensive care unit will be available

Visiting medical specialties will continue to include Otolaryngology, Pediatric Ophthalmology, Urology and Oncology.

Other medical subspecialties which will in the future visit the site to conduct clinics will include Dermatology, Endocrinology, Nephrology, Rheumatology and Hematology/Oncology.

Palliative Care will also be developed within the Medicine Department.

Mental Health/Psychiatry

The NAHC will continue to provide limited psychiatric services to respond to the acute mental health needs of its residents.

Psychiatric short-stay observation capability will continue to be offered on the medical inpatient unit.

Regional mental health services will continue to be offered at Trail Regional Hospital.

NAHC will continue to participate in mental health day programs in conjunction with Mental Health Services. NAHC staff are seconded to KBCHSS for this service. In the future, day programs may be offered on the site of the Health Campus.

Mental health professionals on the site will provide psychiatric consultations in support of all other programs related to psychiatric service delivery operated outside of the Department of Psychiatry. Objectives of these consultation services will be to develop broadly based understandings of mental health issues and basic treatment skills among many health care providers. They will also provide expert treatment services to patients who may not be formally admitted under a psychiatric program, but still require intervention for mental illness.

In-hospital geriatric psychiatry generally will be treated as part of a comprehensive geriatric assessment program. This will involve psychiatric assessments during inpatient phases of care and post-discharge intervention for acute episodes through day programs. Development of a hospital-based geriatric psychiatry specialty is not anticipated.

Health Campus-based mental health professionals will work closely with other regional mental health services in coordinating the activities of community nurses, social workers, and psychologists.

Obstetrics & Gynecology

NAHC will promote the development of obstetrical and gynecological services on the Health Campus site.

Obstetrical services will provide perinatal care through inpatient, outpatient, and outreach services. Inpatient care delivery will be focused on an obstetrical inpatient unit and the labour and delivery suite. Obstetrics will function as a Level I unit.

NAHC will continue to provide ante-, intra- and postpartum care for the residents of NAHC. In addition, the NAHC will continue to provide high risk infant care in preparation for transport to higher level of care.

The program will continue to promote early discharge of mothers and babies with support from the Early Maternity Discharge Program.

High-risk pregnancies will be referred to other centres.

Prenatal classes will be a coordinated service involving hospital and community based staff and others. Emphasis will be placed on maximizing the community's role in obstetrical care.

Counselling for pregnant diabetics will be provided through the Department of Medicine's metabolic services under the direction of a specialist in maternal-fetal medicine.

The existing midwifery program will continue to develop on the Health Campus site. This program will respond to the needs of low risk, uncomplicated obstetrics. Caregivers attached to this program will continue to have admitting privileges at the Health Campus site.

Obstetrical services will participate in the emergency transportation of mothers in labour and of neonates.

Gynecological services will continue to develop around the concept of a women's health centre. The NAHC plans on offering an array of outpatient, multidisciplinary services to respond to the health needs of women including:

- counselling and treatment for menopause and PMS;
- colposcopy services and minor procedures including ovulation induction, therapeutic donor insemination, D & C, and hysteroscopy;
- therapeutic abortion counselling and procedures;
- contraception clinic.

Gynecological outpatient procedures will be limited to those requiring sedation and/or local anesthetics only; procedures requiring general anesthetics will continue to be performed in the Surgical Suite.

Pediatrics

NAHC will continue to provide services for the provision of care to the children. Inpatient pediatric services will be comprised of neonatal care, general medical/surgical pediatric care, and adolescent care (for children aged 12 - 19). "Care-by-parent" will be strongly promoted encouraging parents to take an active role in the in-hospital and post-discharge phases of care.

General pediatric surgery will continue to be available at the Health Campus site, but children requiring specialist surgery will continue to be referred to Vancouver or other centres for the in-hospital portion of their care. Emergency evacuation of patients will continue to be supported by the Infant Transport Team from BCCH.

Pediatric psychiatry tends to involve mostly adolescents with emotional, non-life-threatening problems. If hospitalization is considered necessary, these cases will be admitted under medical services. More severe problems will be referred to adult psychiatric services.

Care of terminally ill children will be accommodated under pediatric services with special palliative care skills being brought in as needed.

Outpatient pediatric care will evolve around the concept of a consolidated Child Health Centre concept. Services will be accommodated to provide primary and follow-up care and will, in some cases, provide alternatives to in-hospital care.

Ongoing oncology and ophthalmology pediatric outpatient care will also be provided at the Health Campus site.

Outpatient pediatric rehabilitation medicine will be offered through outpatient clinics (funded by the Ministry of Children and Families).

Pediatric services as a whole will be developed in concert with Obstetrical services consistent with a program model of care known as a Maternal Child Program.

Surgery

The NAHC will continue to provide surgical services to meet its community service roles on the Health Campus site. Surgical procedures will continue to be performed on both an inpatient and outpatient basis; however, the trend towards more outpatient surgery will be encouraged.

The NAHC Surgical Program will continue to consist of General Surgery, Gynecology, Ophthalmology, Orthopedics, Otolaryngology, Dentistry and Urology.

Visiting surgical specialties will continue to include General Surgery, Orthopaedics, Urology and Thoracic Surgery.

Patients requiring close and constant observation in a high nurse to patient ratio environment will be accommodated in the intensive care unit supporting patients requiring ventilator assistance, hemodynamic monitoring, infusion pumps, dialysis, etc.

Nursing & Patient Care Services

Patient care in the future will continue to focus on the individual needs of patients or residents and their families. Treatment programs will promote the patient's involvement in their own care; patients will play an active role in choosing treatment options and they will be encouraged to view themselves as being largely responsible for the outcome of the treatment they have chosen. Participation by the family in providing in-hospital and post-discharge care will also be promoted. A collaborative care approach among patients, residents and physicians and staff will be encouraged.

To the greatest extent possible and without diminishing the focus described above, patient care will be organized according to a program structure. Under this model, representatives from different disciplines will combine their skills into a coordinated program designed to address the therapeutic and preventive needs of discrete patient populations. This will foster the development of specialization among nursing and allied health workers, but it will not preclude the generalist's role. Since program organization implies a physical consolidation of resources, planning will anticipate a trend towards decentralization of care workers in close proximity to the site of patient care as opposed to centralization in a "host" department.

The program model of health care will not be limited to programs conducted within acute care facilities only. It will be equally relevant to inpatient and outpatient services, and it will also provide support beyond a facility's walls either in the form of follow-up care by staff based at an acute care site or through liaison with community based workers.

MAJOR ACUTE/REHABILITATION CLINICAL SCOPES OF SERVICE

Outpatient & Day Care Services

The description below outlines the scope of outpatient care activity envisioned on the NAHC Health Campus site.

The evolution of outpatient services at the NAHC Health Campus site will generally follow principles of:

- providing an environment that insures patient safety superior to that achievable in a private practice office or community based location
- providing special resources (facilities, equipment/supplies, or staff) not realistically available in private practice offices or in community health services
- providing direct patient care support to inpatient care programs
- consolidating outpatient services which are currently spread throughout other NAHC sites and communities
- providing services more economically than is achievable in a community based location

The NAHC will greatly expand its role in outpatient services by offering a comprehensive array of outpatient, community and social services corresponding to care programs.

Wellness Approach

NAHC will promote a wellness approach to health and will implement multidisciplinary, integrated programs for the assessment and treatment of individuals who are at risk of developing or currently have clinical manifestations of cardiovascular disease, or other chronic disorders such as pulmonary and metabolic disorders, cancers, arthritis, and those at risk for osteoporosis, and who would benefit from behaviour alteration. These programs will also facilitate the coordination of all health promotion/disease prevention programs offered by the NAHC and will include existing programs.

The Health Campus will also include a financially self-sustaining employee wellness program that will serve as a model for other employers in the region and the Province.

Surgical Day Care / Medical Day Care

NAHC will continue to provide surgical services to outpatients undergoing selected surgical procedures and to administer a same day of surgery admission program. Surgical Day Care will apply to procedures requiring general and selected local anesthetics.

In order to provide for surgical day patient preparation and pre-operative and post-operative holding, it is estimated that the total scope of on-site activity will be on the order of 2,500 cases per year.

The projected scope of outpatient surgery includes endoscopic procedures and other minor surgical procedures.

The Medical Day Care activities which currently occur at KLRH will be continue to provide procedures such as:

- transfusions and IV therapy (antibiotic and drug)
- needle biopsies
- endocrine studies, etc.
- anesthetic blocks
- ophthalmological procedures

The scope of this program is estimated to be on the order of 3,000 visits per year at the Health Campus site.

Psychiatric Day Program

The NAHC will develop psychiatric day services in order to promote better continuity of care between in-hospital programs and community or home care programs. In the future, it is envisioned that psychiatric services will be staffed by community based psychiatrists. These psychiatrists will plan on spending a considerable portion of their time in ambulatory-related activities.

Outpatient psychiatric services will include:

- psychotherapy service

- special problem-oriented clinics (e.g., affective disorders, sexual dysfunction, etc.)
- geriatric assessment and outpatient service
- eating disorders program

In addition to these clinic forms of service, a psychiatric emergency assessment service for Emergency Department walk-in patients will be provided.

The scope of this program is estimated to include 5,000 annual outpatient visits at the Health Campus.

General Ambulatory Clinics/Programs

Planning assumes the development of prototypical and flexible outpatient facilities at the Health Campus site. Consultative, examination and procedure rooms will be capable of accommodating a variety of disciplines without mitigating the potential to develop dedicated space for key programs and services. Programs/services which will be accommodated in flexible, multi-use facilities include medicine, surgery, pediatrics, psychiatry, psychology and obstetrics and gynecology, diabetes education and metabolic prevention and treatment services.

Rehabilitation Services

Some outpatient Rehabilitation Services (including PT/OT/ Speech) will continue to be provided to a variety of patients in recovery from medical or surgical operations/trauma (e.g., acute surgical orthopedics, neurological, cancer patients and frail elderly). Assumptions supporting the provision of rehab services at the Health Campus include the continued provision of the following programs: amputations, M.S., Parkinson's, strokes and arthritis.

Other Ambulatory Diagnostic and Treatment Services

The following diagnostic and treatment or clinical support services also accommodate ambulatory patients (inpatients or outpatients):

- Social Work
- Diagnostic Imaging
- Laboratory Medicine
- Pharmacy

Emergency Services

The projected visits to emergency services in the context of the Health Campus are shown in Figure 6. The Figure describes the historical and projected non-scheduled visits to emergency.

Figure 6: Historical and Projected Non-Scheduled Visits to the Health Campus and Emergency

Source: Data from NAHC

	Historical			Projected		
	97/98	98/99	99/00	2005	2010	2015
Visits to Health Campus	14,409	12,428	11,559	13,671	14,970	16,325
Percent of visits diverted				5.0%	10.0%	15.0%
Visits diverted				684	1,497	2,449
Visits to Emergency				12,987	13,473	13,876

Scheduled outpatient care will not be accommodated in the Emergency Department since these patients will be more appropriately served in an outpatient setting. In addition, the presence of physicians' offices on the Health Campus is expected to divert a small percentage of unscheduled emergency visits. As a result, it is recommended that the Emergency should plan for a capacity of 14,000 annual visits.

Inpatient Services

The Health Campus hospital-based services and programs will be programmed to support the bed numbers and case capacities illustrated in Figure 7 below. The projected numbers of patient days and discharges were derived from the number, occupancy rate, and average length of stay for each bed type.

An enhanced focus on a continuum of care for all inpatients will be initiated; including expansion of inter-disciplinary counselling/ assessment, discharge planning and family involvement.

Figure 7: Historical and Projected Inpatient Services

	Historical		Projected		
	97/98	98/99	2005	2010	2015
PATIENT DAYS					
Medical (incl Peds)	9,358	9,803	10,649	11,598	12,195
Surgical	2,177	2,551	2,628	2,862	3,009
Obstetrical	1,117	979	1,165	1,268	1,334
ICU/CCU	831	822	919	1,000	1,052
Total	13,483	14,155	15,360	16,729	17,590
BEDS					
Medical	28	28	32.8	35.7	37.5
Surgical	8	8	10.3	11.2	11.8
Obstetrical	6	6	4.9	5.3	5.6
ICCU/CCU	3	3	4.7	5.1	5.3
Total	45	45	52.6	57.3	60.3
OCCUPANCY	82.1%	86.2%	80.0%	80.0%	80.0%

Note that the historical bed number is actual beds set up, while the projected bed numbers result from utilization projections.

See Appendix F for details of the projection methodology and the alternative scenarios considered in arriving at the bed projections shown above.

The number of 60 acute care beds is recommended as a target value to begin facility planning.

KEY CLINICAL SUPPORT SERVICE ROLES

The NAHC acute care hospitals will accommodate an array of services, which will be available to support the clinical service roles described above. Similar clinical support disciplines will generally be maintained at all four major hospitals, however, specialized services will be developed in response to the unique medical and surgical services based at each site.

Laboratory Medicine

Laboratory services supporting the full range of the NAHC health care programs and services will be provided in an integrated, competitive and customer-friendly fashion.

Within this context, the Health Campus site will function as one of two full service laboratories serving the WKB region with only rapid response laboratories provided at the other hospital sites. Selected volumes of testing currently being referred to the Provincial Laboratory or other labs will be repatriated to the Health Campus lab and all processing of lab tests, including most oncology tests, on the site will be undertaken by the Laboratory Medicine Department. Subspecialty testing will be sent off-site.

Planning for the Health Campus laboratory assumes that the Metro-McNair Lab in the Medical Associates Clinic in Nelson will not continue to operate as a private laboratory service in the community.

It is envisioned that hospital-based specialties will be distributed as follows:

Health Campus/Trail Sites

Clinical Pathology includes:
Chemistry
Hematology
Blood Bank
Immunology
Microbiology

Anatomical Pathology includes:
Surgical Pathology
Cytology
Histology
Autopsy

Other Diagnostic Services include:
Electrocardiology

Other Hospital Sites

Rapid Response includes:
Chemistry
Hematology
Immunology
Blood Bank

Outpatient and pre-admit specimen collection will be provided as part of those services, but administered by Laboratory Medicine.

A regional Laboratory service will continue to be provided from the KLRH and TRH facilities with smaller rapid response laboratories serving the other two hospital sites. Services at the CDH and BH sites will include an urgent, Category I clinical laboratory, including chemistry, hematology, blood bank, and immunology, whereas, microbiology services and anatomic pathology, including surgical pathology, cytology, histology will be provided at the Health Campus. The success of this consolidation will be facilitated by a seamless LIMS (Laboratory Information Management System).

Hospital-based laboratory services will continue to benefit from new technology, which is creating smaller, faster machines and robotics capable of performing more functions with fewer staff. In the longer term, it is assumed these features will promote decentralization of specimen processing closer to the sites of specimen procurement (point-of-care testing). This tendency, however, will be governed by considerations for quality control and cost effectiveness. Specimen processing in the critical care areas, the Emergency Department, and in the vicinity of ambulatory clinics will not be anticipated at this time. Quick sections will continue to be provided within the Surgical Suite.

Full morgue and autopsy facilities will be maintained at the Health Campus site. The Health Campus facility will perform some forensic autopsies.

Diagnostic Imaging

Radiology services in the WKB region will continue to be provided at all acute care sites by radiologists based in Nelson and Trail, with less complex modalities also being offered through privately operated facilities. Diagnostic and interventional procedures will continue to become more reliant on cross-sectional modalities, such as computed tomography (CT) and magnetic resonance imaging (MRI). Since these tend to be more costly technology, their development outside of an acute care hospital is not anticipated.

Planning assumes that general radiography, ultrasound, nuclear medicine, diagnostic mammography and computed tomography will be developed in Nelson and Trail. However, provision of computed tomography and nuclear medicine on the Health Campus site are projected later additions to services offered. Planning will also allow for the future provision of MRI imaging on the Health Campus site through a mobile unit.

Patients requiring angiography and interventional vascular studies will be transferred to an appropriate regional centre.

Teleradiography services will be provided at all NAHC sites eventually. Implementation of teleradiology services at KLRH is currently in progress.

Mammography screening currently on the existing KLRH site will be provided on the Health Campus site (SMBP preference), in Diagnostic Imaging.

The Health Campus acute care site will be the only site to provide a full range of diagnostic and limited therapeutic nuclear medicine services.

Routine in-vitro procedures will also be performed at all sites but in-vitro radioimmunoassay procedures will only be provided by the Health Campus Nuclear Medicine service.

A digital (filmless) medical imaging system utilizing a Picture Archiving Communication System (PACS) with voice recognition transcription capability will be developed in the new facility. Future needs for a darkroom, a dry laser processor and for film storage will not be entirely eliminated, but processed film libraries will be substantially reduced over time, although planned for initially.

Imaging outside of the Diagnostic Imaging component will include the provision of fixed equipment in the Surgical Suite (urology O.R.), with mobile imaging elsewhere.

Rehabilitation

Rehabilitation will continue to offer a broad range of services to acute inpatients and outpatients, long term care residents, and to a number of community based programs. It will expand its services to include Speech Language Pathology and will augment its professional staff through engagement of rehabilitation assistants.

Rehabilitation Services will also provide support to a wide range of risk reduction and health promotion programs, including cardiac rehabilitation, diabetic day care classes, training sessions for new staff members, etc., which will be offered through wellness and health promotion programs in the expanded Outpatient Services of the Health Campus.

Planning for Health Campus-based Rehabilitation Services assumes that the two private physical therapy and one occupational therapy clinics in the community will remain in operation for the foreseeable future.

Primary services offered by Rehabilitation Services will continue to include knee classes, the cardiac rehab program, back classes, diabetic day care classes, musculoskeletal injury prevention program, a range of occupational therapy services, including splinting, orthotics, ADL training, perceptual and functional assessments and assistive devices, neurological assessments, and difficult swallowing and speech assessments by SPL. In addition, enhanced services will be provided for discharge planning from the acute care facilities to prevent deterioration of function of patients waiting for placement or discharge to home.

Pharmacy

A regional Pharmacy Service serving several sites, including facilities in Nelson, Kaslo, Nakusp, New Denver, and Grand Forks will continue to promote and support safe drug therapy and will assume responsibility for achieving optimum drug treatment outcomes for patients and residents.

The production of unit dose packaging and dispensing, special medication compounding, narcotic control, as well as inventory control will be provided at the Health Campus site. Sterile manufacturing, where required, will continue to be provided at each site.

Within this regional context, pharmacy services will focus on enhancing care activities and expanding hospital, residential and community based clinical programs. A computerized drug distribution service will operate from the basis of a regional formulary.

Increased automation, which will facilitate a unit dose distribution system and expansion of centralised intravenous admixture (CIVA) services, is also planned.

Medication needs of acute/rehabilitation patients and long-term care residents will be accommodated under a region-wide system. Components of this system will be both centralized and decentralized based on current trends of physically separating the roles of clinical pharmacists from the "production technology" of pharmacy operations.

The model proposed for the region will include a central drug preparation and distribution centre at the Health Campus site with pharmacy satellites being decentralized for the other care sites.

Centralized functions will include purchasing, manufacturing/ compounding, packaging, unit dose picking, and inventory management. Decentralized functions will consist of provision of STAT medications, interim doses as well as some ward stock medications and clinical pharmacy consultations on the use and potential side effects of medications. Consultative services will be available to patients as well as medical and nursing staff. Dispensing to outpatients and emergency patients will be decentralized to each of the care sites.

Dispensing of medications will generally be conducted using medication carts with unit dose trays for acute inpatients and 35-day blister packs for long term care residents. Planning assumes that unit doses will be delivered to each site by NAHC's transportation network and then each site's internal portering system will deliver to the point-of-use assuming that the required level of security containment can be maintained throughout delivery.

Pharmacy Information access will include (paperless) on-line charting and prescribing, and access to PharmaNet at key locations on all sites.

Pharmacy's outreach role will be accommodated at all acute care sites, however, planning assumes that very different foci will evolve at each one. The Health Campus site, which is the proposed location for most of the "high technology" services, will participate in various home care programs (in cooperation with KBCHSS) in which the emphasis is on drug therapy (e.g., home IV therapy, home TPN, direct observed therapy). Home care will generally be a shared responsibility, involving community service agencies, but the integration of pharmacy personnel into such roles as home visits, patient and community worker instruction, and drug preparation and delivery is anticipated.

Other outreach functions anticipated for the Health Campus site will build on the existing pharmacy-based drug information service and planning assumes that a regional poison control service will continue to be provided by St. Paul's Hospital. This service will provide 24-hour consultative coverage for suspected and confirmed cases of poisonings and drug reactions. Access will usually occur by telephone, however, the service's reference materials will also be available to authorized hospital personnel. In the future, access may also be available through the NAHC's computer network.

In addition to its clinical service role, Pharmacy Services will participate in clinical research protocols particularly as they relate to smaller rural communities, partnering with larger institutions and pharmaceutical manufacturers. Studies will include the evaluation of approved medications and "phase II" trials involving new medications. The scope of services required to support these will coincide with those established for routine clinical services, therefore, substantial requirements for research-dedicated resources are not anticipated.

CONTINUING CARE ROLE AND SCOPE OF SERVICE

The Health Campus will accommodate a multilevel care facility which will replace the existing Mount St. Francis Hospital. As detailed in Appendix G, the residential component will encompass 86 beds.

The program will provide Intermediate Care level 3 and Extended Care for residents who have substantial physical and/or mental functional disability and require daily treatment or supervision by nursing staff and other trained staff. The component will accommodate both the elderly and younger adults.

The respite program will provide for temporary admissions of particular persons living in the community, allowing relief to family care-givers. Respite admissions could range from 1 day to a few weeks.

The Adult Day Program will be focussed on patient assessment, rehabilitation, and development of future care plans and counselling support of family members. The program is anticipated to have up to 20 spaces for clients 7 days per week throughout the year, with an additional 10 spaces for persons with dementia.

Palliative care services will continue to be provided on the Health Campus site. This will allow family members unrestricted visiting hours and to encourage them to stay as much of a twenty-four hour day as is comfortable.

It is anticipated that the multilevel care beds will be occupied 99.5% of the time except for respite beds will be occupied 95% of the time.

Figure 8 presents the age-adjusted utilization rates in terms of cases, days, visits and hours by residents of the peer CHCs. The rates are in terms of a 5-year average over 1994-95 to 1998-99.

It should be kept in mind in reviewing the utilization rates that these rates are only an indicator of potential need or demand. The rates may also represent the availability of services and resources and even the efficiency of the various CHCs in providing services. It is clear that services such as extended care beds are essentially used at 100 percent of capacity. Therefore, differing rates may represent differing bed availability as opposed to need.

NAHC's rate of adult day care utilization in terms of days is the highest of the peer CHCs, while the rate of cases is within the range of the peer CHCs.

The NAHC rate of extended care utilization is among the highest of the peers, being exceeded only by North Peace CHC.

The rate of nursing care cases and visits is highest for NAHC of all the peer CHCs.

The NAHC rate of home support utilization was the highest of all the peer CHCs. The rate of residential care utilization was within the range of the peer CHCs.

Figure 8: Age-Adjusted Utilization of Continuing Care Services, Peer CHCs, 5 Year Average 1994-95 to 1998-99

Peer CHC		Adult Day Care Cases	Adult Day Care Days	Extended Care Cases	Extended Care Days	Home Nursing Care Cases	Home Nursing Care Visits	Home Support Cases	Home Support Hours	Resident-ial Care Cases	Resident-ial Care Days
Age adjusted rate											
6	Nelson & Area CHC	1.9	88	6	1,075	14	344	18	2,620	11	2,358
16	Sunshine Coast CHC	2.0	64	3	636	8	190	14	1,660	9	1,830
18	Sea to Sky CHC	1.6	22	4	749	8	189	14	2,270	11	2,309
20	Campbell River/Nootka CHC	2.2	50	3	755	11	271	19	3,759	8	1,860
24	North Peace CHC	3.8	40	6	1,160	13	321	16	1,548	13	2,916
28	Terrace & Area CHC	1.5	22	4	963	11	336	14	2,082	13	3,106
	British Columbia	1.5	52	4	954	10	191	13	1,962		
As percent of BC rate											
6	Nelson & Area CHC	135%	181%	129%	114%	138%	183%	150%	135%		
16	Sunshine Coast CHC	145%	131%	67%	67%	84%	101%	118%	86%		
18	Sea to Sky CHC	110%	44%	84%	79%	75%	100%	118%	117%		
20	Campbell River/Nootka CHC	158%	102%	77%	80%	110%	144%	162%	194%		
24	North Peace CHC	270%	81%	137%	123%	129%	171%	137%	80%		
28	Terrace & Area CHC	105%	45%	100%	102%	111%	179%	117%	107%		
	British Columbia	106%	105%	100%	101%	101%	101%	114%	101%		

Projection Scenarios of Multilevel Care Bed Requirements

The Continuing Care Branch of the Ministry of Health utilises a model for planning purposes to evaluate the requirement for residential beds in the various Community Health Councils and Regional Health Boards of the Province.

The model is very simple. It sums all the residential care days for the entire Province by age group and then arrives a Provincial rates of days per 1,000 persons of each age group. These Provincial rates are then applied to the various Community Health Councils and Regional Health Boards of the Province.

The model does not take into account referral rates between CHCs and RHBs of the Province, nor does it take into account the unique circumstances of any CHC or RHB, which would warrant the use of rates either higher or lower than the Provincial average.

The existing beds in NAHC are: Nelson Jubilee Manor: 39, Mount St. Francis Hospital: 79, Willowhaven Centre: 82, Victoria Hospital of Kaslo: 5, for a total of 205 beds, however, only 197 beds are funded by MOH for IC and EC residents.

The model is based on residential care beds being defined as intermediate care levels 2 and 3 and extended care.

Figure 9: Projected Bed Requirements Using CCB Planning Model

	Year			
	2000	2005	2010	2015
Days	71,123	92,716	107,881	115,975
Beds Required	195	254	296	318
Shortfall/Surplus	+2	-57	-99	-121

The result of the model, illustrated in Figure 9 above, as applied to the 2000 NAHC population is a requirement for 195 beds. Projection of the model's rates to 2015 results in a requirement of 318 beds, or a shortfall of 121 beds from the current number of 197.

It should be reiterated that the model does not take into account the relatively higher utilization rates of rural and remote areas being counterbalanced by the relatively lower rates in urban and highly populated areas. As such, the results of the model should be regarded as the very lowest end of the range achievable for residential care beds in NAHC.

NAHC is planning on providing assisted-living housing for 60 persons on the Health Campus site by 2015. These assisted-living housing units are intended to partially substitute for residential care.

A scenario using the Continuing Care Renewal Plan methodology is outlined in the Business Case.

The number of 86 multilevel care beds is recommended as a target value to begin facility planning

Note that of the 86 MLC beds on the Health Campus site 79 would be a replacement of the existing Mount St. Francis beds. The net gain of residential care beds in Nelson and Area would be 7 new beds.

ASSISTED-LIVING HOUSING ROLE AND SCOPE OF SERVICE

Assisted-living is envisaged by the NAHC for its Health Campus as providing a combination of care and housing for individuals eligible for Continuing Care Services who would benefit from a supportive environment. The residents could have a combination of medical and behavioural conditions, which potentially require non-professional staff support on a 24-hour basis.

Substitution Model of Care Service Allocations

The calculation of the number of potential assisted-living units was done using a substitution model. The model reallocates clients at each care level from residential care and home support to assisted-living according to agreed percentages as illustrated in Figure 11. The current allocations are as follows:

Figure 11: Current Service Allocations, 1998-99

Care	Clients				Percent		
Level	Residential Care	Home Support	Assisted-Living	Total	Residential Care	Home Support	Assisted-Living
EC	94	5	0	99	95%	5%	0%
IC 3	56	26	0	82	68%	32%	0%
IC 2	53	100	0	153	35%	65%	0%
IC 1	0	92	0	92	0%	100%	0%
Total	203	223	0	426	48%	52%	0%

Five percent of existing EC clients are home support recipients while 95 percent are in residential care. About one-third of IC3 clients and two-thirds of IC2 clients receive home support.

A tenant in the assisted-living complex would be eligible for continuing care services and require both housing and care services. Most of the tenants could be described as "frail" and likely would have characteristics commonly found in a person assessed at the IC 2 level of care, i.e., the person who is independently mobile, requires moderate assistance with activities of daily living and daily supervision. However, it is envisaged that 10 percent of EC clients and 30 percent of IC3 clients would be tenants in assisted-living. Note that assisted-living is relatively new in British Columbia and the percentages shown are based on limited experience, primarily in urban areas.

The combination of all clients of residential care, home support and assisted-living is projected to be 850 by 2015 (Figure 12). Of these, 134 are projected to be potential clients for assisted-living units.

Figure 12: Projected Service Allocations, 2015

Care Level	Clients				Percent		
	Residential Care	Home Support	Assisted-Living	Total	Residential Care	Home Support	Assisted-Living
EC	168	20	10	198	85%	10%	5%
IC 3	82	49	33	164	50%	30%	20%
IC 2	31	183	92	305	10%	60%	30%
IC 1	0	184	0	184	0%	100%	0%
Total	280	436	134	850			

Planning for assisted-living on the Health Campus site requires a review of existing and potential future residential options for elderly persons in NAHC. **It is proposed that, for planning purposes, 60 persons be accommodated in an assisted-living arrangement on the Health Campus.** Note that the projected demand for residential care described above has been reduced in accordance with the projected availability of assisted housing for 60 persons.

HEALTH PROFESSIONALS OFFICE ROLES AND SCOPES OF SERVICE

NAHC has included in the concept of the Health Campus the participation of health professionals and healing arts practitioners.

Location on the Health Campus would permit physicians, physiotherapists, and other practitioners of healing arts to conduct private office consultations and offer appropriate office-based counselling, diagnostic and treatment services. For the purposes of planning, it is assumed that the Centre could potentially accommodate approximately 26 health practitioners.

In addition the Health Campus would accommodate small retail enterprises which focus on health and wellness such as alternative health products, food service establishments, etc.

Note that these services would not be operated by NAHC but would permit non-NAHC services a way to function on the Health Campus and take advantage of the synergies and potential improvements in client and patient care which could result.

EDUCATION SERVICE ROLES

The NAHC will respond to the varied educational needs of patients, residents, clients, students and all health care workers.

Clinical education for caregivers and health-related professionals will be coordinated through Human Resources whereas non-clinical and other education needs, related to the overall functioning of the facility, will be coordinated primarily through Education Services.

Health care professionals are committed to maintaining a level of competence to meet the challenges of continual health care advancement and to provide quality client-centred care. Educators, in cooperation with the staff and management, ensure the clinical educational needs are met through orientation, skill development, skill certification, and ongoing continuing education.

Educational practicums are also coordinated for health professional students to allow the essential practical experience required to become competent skilled professionals.

All health care professionals have a responsibility in the provision of client education to focus on the needs as identified by the client and their families. This obligation will be supported by a wide range of programs and services accessible within the NAHC.

Educational functions will be supported by ancillary services in the preparation of course content and materials, advertising course offerings, coordinating registration and course locations, and evaluation courses. Support services will include:

- health sciences and wellness library
- audio-visual equipment loan, repair, and maintenance
- centralized room booking

RESEARCH SERVICE ROLES

The health-related professions provide a wealth of opportunity for clinical research. Strong beliefs in the advancement of knowledge, aspirations to continually improve care practices, outcomes and overall health standards, and ready access to patients, residents, clients and comprehensive data bases promote support for the following types of research projects:

- epidemiological/statistical studies analyzing the incidence of health problems and patient population characteristics
- program/outcome evaluation
- clinical trials testing new procedures or innovative programs

The uniqueness of the Health Campus concept in a rural location should offer rich opportunities for health and wellness research activities.

Protocols developed and conducted by staff will be accommodated on-site as will collaborative, multi-centre studies.

Coordinating centres for the latter will typically not be based at any acute care site. It is envisioned that hospital-based clinical research will generally be accommodated within the clinical service area normally provided in support of patient/resident care. Additional dedicated research space is generally not anticipated.

A role in applied basic or wet bench research is also not anticipated.

OPERATIONAL PARAMETERS

OPERATIONAL PARAMETERS

KEY FACILITY-WIDE OPERATING SYSTEMS & SUPPORT SERVICES

This section of the document describes key operating systems involving the movement of patients, visitors, staff, specimens, consumable and recyclable materials, equipment, and information and the proposed methods for doing so. Factors having a direct bearing on operations at the Health Campus site are also described.

Biomedical Engineering Services

Biomedical Engineering services for the region are based at the Trail Regional Hospital and this is assumed to continue.

Biomedical Engineering supports the acquisition, repair, and routine maintenance of medical devices used in the delivery of patient care. Development and evaluation of new and/or experimental equipment is also performed. Although some electrical equipment is serviced by plant maintenance personnel, clinical engineers typically focus their work on equipment that is used for the diagnosis, monitoring and treatment of patients.

The range of clinical engineering services described above will continue to be provided to all facilities in the Region (including home care services). On-site work will require periodic travel by clinical engineers making this mode of service delivery especially appropriate for scheduled preventative maintenance programs. Urgent responses to unanticipated equipment failures will be addressed through special visits and/or an equipment loaner service.

Due to extensive reliance on electronic technology in the provision of acute care, planning assumes that basic engineering workshop space will be established at each acute care site. Furthermore, it is assumed that one enhanced, full-service technical workshop capable of providing the regional services described above will be maintained in Trail. The Health Campus site will experience an increase in technology-intensive disciplines which will necessitate a full-time on-site clinical engineer.

As a consequence of the expansion and volume of technical resources, more in-service staff education and demonstration activities will also be provided.

Planning assumes that specialist biomedical engineers will continue to service imaging and lab equipment, but will not become involved with servicing NAHC's information systems. Difficulties in distinguishing between hardware and software problems warrant leaving this function under a single authority and preferably under the NAHC's Health Information Management service.

Engineering & Maintenance Services

Engineering & Maintenance Services will provide a full range of services supporting the maintenance and daily operations of facilities under NAHC jurisdiction including renovation/ construction projects up to $1.5 million. Services include:

- Facilities Maintenance & Repairs
- Facilities Plans/CAD Files Management
- Plant Operations/Engineering (energy centres)
- Security Services (including parking control and video surveillance/card access systems)
- Maintenance of call centre and building alarm systems

Most of the above services will be at least partially decentralized to each of the NAHC facilities because of needs to continuously support daily operations. The administrative functions supporting NAHC Engineering & Maintenance Services will be consolidated at the Health Campus site.

- Selected services that will continue to be contracted out include:
    - Medical gases testing
    - Pressure vessel inspection
    - Breakers/transformers
    - Appliance repair (kitchen equipment/sterilizers, etc.)

The materials inventory for Engineering & Maintenance Services will be standardized and decentralized to each Engineering & Maintenance Services department on each site.

Energy management is a major operational issue and expense for the NAHC and, therefore, the project will ensure effective energy conservation options are incorporated into the new facilities.

Health Information Management

A number of KLRH departments are currently involved in the management and/or retention of health information and, in the future, these will be consolidated under a single management unit as described below:

Health Records

The ability to universally access and share patient-related information among authorized users of this information throughout the region is a major development priority. This concept will promote the use of the 'virtual health record' which is defined as a *digitally stored, computer accessible collection of* *health information about one person linked by a person identifier.* This will enable each patient/resident/client to be tracked and his/her history retrieved regardless of where they enter the system. With an integrated and ubiquitous information system, patient/resident/client information can be linked rapidly to medical treatment protocols. In addition, such a system will permit comprehensive utilization management.

The type of information available would include:

- Demographic data
- Personal health data
- Visit history
- Medication profiles
- Diagnostic test results
- Diagnostic images
- Assessment data
- Clinical notes/consultation
- Physician notes
- Nursing/care documentation
- Immunization records

The ability to share and access patient information will promote the integration of inpatient, outpatient, and emergency patient records under a single system. This will not preclude decentralized holding of active records (e.g., in the vicinity of the ambulatory clinics), however, all records will be managed according to a common set of standards and update practices. Furthermore, all records generated in respect of services provided under the auspices of NAHC will be considered NAHC's records. Individual physicians providing services on behalf of NAHC may keep extracts for their own records; however, these will be optional and will not replace any part of NAHC 's records. Partially centralized transcription services will be provided at all sites initially, but this service will likely be phased out as the "virtual record" goes on-line and voice recognition computer systems are fully operational, or allowing for off-site (including home-based) transcription, abstraction, dictation and data analysis.

Records of patients being actively followed will be held within each service area enabling ready access by medical and other authorized personnel. Once a patient is no longer active in a service, his/her record will be deemed inactive and will be returned to the custody of Health Record services for retention and then retrieved when necessary.

Planning assumes that the long-term retention of inactive records will be centralized within NAHC and accommodated off-site under Health Records control. Inactive records will remain under the control of the appropriate care site; however, sharing of records between sites is anticipated. It is assumed that, in the longer term, some or all of inactive records will be electronically scanned and stored on disk or will be destroyed.

Management of services to patients and their escorts on the acute care sites will promote a concept of "one stop shopping" providing a patient-focussed, seamless transition through the various service points of the Hospital. Facilities and services having natural public affinities or that are routinely accessed by patients will be consolidated as much as practically possible. Physically grouping services such as admitting with reception/general information, patient locater service, and patient accounting will enable rapid processing of an encounter. Furthermore, these encounters will be self-initiated as opposed to being directed by a hospital's escort service.

At all acute care sites, first visits to an outpatient clinic or for outpatient diagnostic procedures will require patients to proceed to their destination via Admitting services. Subsequent visits for treatment and/or assessment of the same condition will not require a stop-off in Admitting before proceeding to their destination.

Admitting/Central Registration/Office Services

Admitting/central registration/office services will continue to function as the initial point for core data collection on most acute patients entering NAHC's health care system. The Health Campus site, however, will assume an added role as the NAHC's coordinating centre for assignment of patient identification due, in part, to the breadth of care services offered.

Admitting functions for outpatients and inpatients at the Health Campus will continue to be centralized. However, the assignment of unique patient identifiers will be consolidated at the Health Campus site and will capture "core" data on all patients entering any part of the system.

Use of a single patient identification system throughout the region does not imply a single patient record, although a single record, which follows a patient to any care site, is conceivable. The model being proposed is a means of accessing patient information only and planning assumes that each care facility will either create records suited to their own needs or will "borrow" existing records and update the contents as necessary.

Patient booking will be decentralized to each department where feasible, but with access to a common database.

Strong communication linkages will continue to develop between admitting services and the various booking functions throughout the site. The surgical suites, ambulatory clinics, day programs, and the various clinical support services will continue to manage their own scheduling, but having access to a common data base will enable coordination of services during a single visit.

Switchboard/Call Centre

Switchboard services will be expanded to become a NAHC call centre located with administration. Reception/information services, currently provided by Central Registry and Office Services, will continue.

Health Information Systems

The model on which the NAHC will develop its health information systems assumes a centralized core of patient information. Other user applications will be fully integrated with this core; however, different applications and the core will be allowed to develop independently of one another (subject to integration capabilities). Each NAHC site will include a centralized facility to accommodate communications technology as well as personnel assigned to each site for user support services.

Decentralized access to the patient-based core is assumed with the CHC and region promoting "access at point of service" among all of its facilities.

Detailed plans for the future organization and operation of NAHC's Health Information Management department will evolve through subsequent planning work. Master programming for the Health Campus site, however, will be guided by the following assumptions:

- Information technology for the CHC will continue to operate within the provincial health architecture framework and has been developed in order to maximize the use of multi-media communications systems focussed on voice/data/video imaging.
- Locations for facility management will be dependent on the specific applications and influenced by a number of factors, including need for security provisions, number and size of servers, etc. It is assumed, however, that both remote and on-site facility management will be utilized.
- Hardware and workstations supporting a variety of user applications will be accommodated locally (i.e., within user departments at all care sites), but the communications

technology allowing integration with the core and with other sites will be centralized on each site.

Each NAHC site, including the Health Campus will accommodate decentralized computer workstations throughout user departments supported by a centralized server centre.

A sample of applications that are of greatest significance to functional programming include:

- remote access to a networked, secure system by physicians and other community agencies;
- extending the network within and beyond the walls of Health Campus will allow for telehealth/medicine, video conferencing, teleradiology (i.e., exchange of grand rounds information, exchange of electronic imaging, etc.);
- an electronic patient record will evolve with the creation of a data repository; with the use of SMART cards and/or other menus, patient information can be consolidated across multiple provider organizations;
- a mainly copper and fibre optic landline based WAN strategy moving to wireless and portable communication devices allowing flexibility as to place of work (70 to 80% of communications traffic will be wireless);
- 'point-of-care' technology using wireless technology which will allow clinicians to document workload and patient charts electronically;
- educational resources found internally and externally will be accessible (i.e., CD banks).

Training of NAHC information systems personnel and staff at any of NAHC's facilities will be based at the major sites (i.e., Health Campus, Victorian Hospital, etc.). General information systems administration will be centralized at the Health Campus site. User support for individual workstations and applications, including the personnel responsible for providing this support, will be decentralized to various sites as required.

Although technology will support conversion to electronic records and data management, short-term planning will anticipate the continued generation, movement, and retention of paper documents.

Space for equipment storage and a staging area to prepare and load workstations scheduled for displacement as well as a staff training room are also required. These functions will be centrally located at the Health Campus site.

Telecommunications

The NAHC and the WKBHR should be served by a state-of-the-art telecommunications system. Two main components of this system should be a voice/data/video switch and an integrated voice processing system, plus a 'virtual private network' allowing local-to-local calling via a 4-digit coordinated dialling plan connecting all sites. The availability of this system should allow the following enhancements:

- Nurse Call System - Integrated.
- Wireless - (including wireless handsets in Nursing Units as part of the Nurse Call upgrade), leading ultimately to connectivity between Nurse Call, Wireless telephone, Meditech, patient, physician and nurse.
- Aimworks - a comprehensive Telemanagement System consisting of several modules allowing for ranging levels of self-management of the telecommunications infrastructure.
- Voice Processing - including features of the voicemail server expanded to provide enhanced voice processing, IVR and unified messaging.
- Call Centre - allowing the CHC or CHSS to configure any of its sites to function as a Call Centre on a dynamic basis.
- Med Help - including a suite of communications oriented applications, e.g., Physicians Office Network (P.O.N.), Patient Phone Services, Telemedicine and Video Conferencing (including desktop televideo-conferencing).

Housekeeping Services

Housekeeping will continue to be a locally managed service for the purposes of maintaining a clean and sanitary internal environment; ensuring a healthful environment; and preserving the capital investment in physical facilities by regularly scheduled cleaning.

Key functions of this service include:

- administrative activities relating to CHC housekeeping services management, staffing and record keeping
- training for housekeeping staff

- centralized storage for major housekeeping equipment for all facilities on the Health Campus
- storage of approximately 1 week's supplies from which housekeeping staff will top up aide carts
- general cleaning of interior building surfaces, including interior window surfaces
- cleaning of operating rooms, and LDRP's between procedures, and nightly storage, recharging and cleaning of housekeeping equipment in Surgical Suite and Maternity Unit
- cleaning patient/resident rooms, and stripping and making all beds at time of patient discharge or transfer; decontamination of beds
- washing of general purpose moveable equipment (e.g., I.V. poles, wheelchairs, stretchers, carts)
- collection of garbage and transfer to garbage chutes (if provided)
- collection of soiled linen and transfer to linen chutes (if provided)
- minor furniture rearranging, conference room set-ups
- handling of all recyclable products

Housekeeping closets, each servicing approximately 700 m^2 will be distributed throughout the new buildings, providing space for day-to-day housekeeping supplies. Housekeeping closets will also provide for storage of basic housekeeping equipment (i.e., aide cart, with wheeled bucket/mop; floor sink; vacuum cleaner; floor polisher; brooms, etc.).

Materiel Management Services

NAHC Materiel Management will be built upon a concept of centralization designed to eliminate the duplication of functions, which are common to many facilities. The scope of services described below will be centrally administered and will support the acquisition and distribution of materials for all facilities under NAHC's jurisdiction. Inherent in the concept of centralized administration is communications technology enabling the integration of materials handling and financial systems.

General administrative services (including purchasing) supporting Materiel Management, transportation services and a single stores inventory location will be consolidated in an on-site warehouse.

Medical, nursing, allied health and technical personnel at the various sites will have input to purchasing decisions, however, requisition processing, tendering and contract administration of all material will be carried out by Materiel Management staff.

Management of consumable supplies inventory will rely on the development of an on-site central warehouse for the CHC and satellite stores at other NAHC sites. The satellite stores in other NAHC sites support needs such as:

- cart staging area
- safety stock items
- disaster stock items
- fresh (daily) food supplies
- capital equipment receiving

Inventories of consumable supplies required by care units and departments in their day-to-day operations will generally be maintained close to point-of-use according to a "par level" system. Requisitions will be filled from the central on-site warehouse and trucked to each off-site facility.

The linen system will be maintained by Regional Linen Service personnel, and the distribution of all linens will be handled by Linen Services staff using an exchange cart system (see Regional Linen Service description below).

Material Management will provide high volume photocopying. All other printing requirements will be contracted out. A central mail service will be provided from Materiel Management.

Materiel Management services will assume responsibility for the distribution of all supplies, materials, food, equipment and linen throughout the Health Campus. A messenger/portering system will rely on Material Management staff to move supplies (including top-up and exchange carts) and equipment.

Active equipment storage for items used intermittently (including stand-by equipment) by a variety of users will be managed by Materiel Management.

The scope of services included under the NAHC centralized Materiel Management service will include archival storage and retrieval. Traditional users of this type of service (Administration, Health Records, Medical Imaging, and Laboratory) will have access to a central inactive stores area and will administer policies governing retention of items held there. The long-term retention of inactive records will be maintained off-site.

Also included at NAHC's centralized materials service will be a central dead stores area for the long-term retention of equipment and furniture items.

Nutrition & Food Services

The provision of patient, staff and visitor meal services in the NAHC will be based on the concept of decentralized food production facilities at each of the acute care sites and a number of the residential care sites. Each WKB acute care hospital site will continue to operate separate Nutrition & Food Service

Departments providing for the production of food utilizing production kitchens, plus cafeteria and catering services.

The system at the Health Campus site will utilize a conventional production kitchen with a central tray assembly line for most acute beds and bulk food delivery to residential and housing beds.

Planning assumes the following functions to be conducted at each site:

- product breakout, assembly and ingredient control
- processing to include a mix of outsourced products as well as those prepared on-site
- limited processing of specialty and therapeutic food requirements utilizing conventional technology
- meal tray assembly
- bulk food assembly to serve dining room service/buffet service on selected patient care units, selected residential facility sites and revenue/catering operations
- assembling meals for transportation (incl. Meals-on-Wheels and take home meals for patients/adult day care clients, etc.)
- warewashing
- delivering meal trays to and from the patients' bedside or dining area
- short order preparation in revenue and catering operations
- catering to functions held on-site
- restocking decentralized kitchenettes
- maintaining inventories of perishable food items used by food services

Planning assumes the following functions to be conducted centrally from NAHC's offices:

- purchasing utilizing an electronic order/inventory system with most contracts to be tendered by the Kootenay Materiel Services Alliance
- four-week core menu planning
- vending contracting

A computerized management information system (MSM) will be used for menu processing, production, cafeteria/catering and nutritional assessments. Data files will be created for patient nutritional care plans and monitoring of outcomes, as well as menus, recipes, inventory items and menu costing. Nutritional analysis capabilities will also be available. This system will be integrated with NAHC's Meditech IS platform.

Inpatient and outpatient dietetic counselling services will be provided at the Health Campus site. Both individual and group nutrition education will be provided to patients/residents/clients and their families. Services provided by inpatient dietitians will form an integral part of the inpatient care team. Dietitian offices will be decentralized to locations in close proximity to selected services/programs to which they provide therapeutic nutrition services. Dietitians will provide post discharge follow-up to their clients.

Regional Linen Services

The NAHC will continue to provide regional linen services out of new facilities located on the Health Campus site. Centralized services will continue according to a total linen management system consisting of:

- general administration
- soiled and clean linen handling to user facilities
- soiled linen processing
- pack making (including surgical and obstetrical packs)
- standard and custom cart stocking
- uniform service (including purchasing and tailoring)
- inventory monitoring and control

Major objectives of this centrally administered service is to maximize the use of circulating stocks, control loss, minimize requirements for linen inventories at each site, and reduce the amount of handling as linen and linen bundles pass from point of processing to point of use.

Users of the centralized linen service will continue to include all acute care hospital sites as well as several long-term care facilities in the WKB region. As well, facilities outside of the region may be provided service by the Regional Linen Service in the future. The control of linen at each of these locations will become a decentralized extension of the central service and will include:

- linen bulk and exchange (quota) cart distribution
- soiled linen collection from containment areas associated with a linen chute
- restocking and monitoring decentralized inventories
- uniform distribution and collection

Decentralization of linen management to all care sites will require the presence of Regional Linen Service personnel who will be responsible for the handling of clean and soiled linen and uniforms, but with distribution provided by Materiel Management.

The transportation of linen between user facilities and the central processing site will be by regularly scheduled truck deliveries. Linen delivery to point of use will be conducted by Regional Linen Service personnel using exchange carts.

Transport Services

Critical to the NAHC's success in moving large volumes of people, supplies, equipment, specimens, food, and information and moving all of these items on time, is a coordinated transportation system. Planning, therefore, assumes the establishment of a central transportation service that will assume responsibility for all aspects of a scheduled vehicular pick-up and delivery system. Unscheduled and urgent requirements will also fall within this service's responsibility with the exception of emergency patient transportation. The region's transportation network will accommodate movement of the following:

- patients and long term care residents (elective and non-urgent cases only and excluding ambulance transportation)
- staff
- consumable supplies, pharmaceuticals and equipment
- prepared food and soiled ware
- mail including inter-office mail
- specimens, films, and patient records
- linen and uniforms
- waste

PHYSICAL PARAMETERS

PHYSICAL PARAMETERS

SITE

The new Health Campus facility will be developed on the lands owned by the NAHC at the site of the existing Mount St. Francis Hospital at 1300 Gordon Road, Nelson, British Columbia.

This property consists of two parcels with a total site area of approximately 8.7 hectares (21.7 acres). The site is located in the Fairview area of the city and is designated primarily as a residential neighbourhood with a low density 'green' image, while also including a number of other public use buildings such as the Selkirk College and the LV Rogers Senior Secondary School.

FACILITIES

The existing Kootenay Lake Regional Hospital building will be vacated when the new replacement facility is built and commissioned. Alternative uses for the existing hospital facility and site will be investigated, and an assessment of the value will be made should the property be considered for sale.

The existing Mount St. Francis Hospital facility will be vacated and demolished when the new replacement facility is commissioned.

FINANCIAL PARAMETERS

FINANCIAL PARAMETERS

CAPITAL FUNDING

No fixed capital budget has been established for the NAHC Health Campus project. The Master Program will rationalize and establish space requirements on which an updated preliminary capital cost estimate will be generated. Alternative capital funding support and arrangements will be investigated in subsequent stages of planning for selected portions of the Health Campus.

There are no capital funding restrictions on the functions to be included in the project which would contribute to improved health delivery and efficiencies in operation.

OPERATIONAL FUNDING

No fixed operating budgets have been established for the replacement hospital, residential facilities and new community based services; however, a preliminary Pre-Construction Operating Estimate (PCOE) will be prepared for those aspects of the Health Campus which are to be included within this project.

INTRODUCTION

This section of the document describes the activities and spaces which are required to meet the proposed roles of the Health Campus and its constituent parts, as described in the previous Program Parameters section. The Master Program can be viewed as a "translation" of the stated parameters into preliminary physical resource requirements. **This information will be developed in considerably more detail in a subsequent facility programming task and should, therefore, be viewed as preliminary information sufficient in accuracy and detail for project definition and master planning purposes.**

This document is presented in three main sub-sections as follows:

- Space Summary table provides a listing of programmed component gross areas and building gross areas for the Health Campus facilities. The functional components in this program are organized by service groups reflecting the type of facility, which will likely be required to house them, and consequently incurring differing unit costs to construct. There are 6 main service groups as follows:
    - High/Medium Serviced Facilities (Post Disaster)
    - Low Serviced Facilities (Post Disaster)
    - Low Serviced Facilities (Non-Post Disaster)
    - Industrial/Shop Facilities (Post Disaster)
    - Industrial/Shop Facilities (Non-Post Disaster)
- General Planning Criteria provides an understanding of major planning concepts and objectives, which pertain to the Campus as a whole or to particular groups of functional components.
- Component Planning Criteria provides a scope description of each functional component of the Campus with an estimate of future space requirements and the preferred relationships each component has with other components.

BUILDING SPACE SUMMARY

The building space summary in the table below tabulates the component gross areas square metres (CGSM) for each functional component by service group as well as the building gross square metres (BGSM) for the building(s) as a whole. The areas shown in brackets [ ] have not been included in the Total Component Gross Area since they already reflect a building gross mark-up, but they have been included in the Grand Total Building Gross Area and included in the project scope. The areas in parentheses ( ) are also excluded from the Total Component Area because they too already reflect a building gross mark-up, but are areas that are likely to be funded through alternative sources.

	Service Groups/Components	2000 Master Program **NSM**	Grossing Factor	2000 Master Program **GSM**
A	**High/Medium Serviced Facilities (Post Disaster)**			
A1	General Inpatient Units (50 beds)			
	Inpatient Units	1 217.0	1.45	1 765
	Shared Support Area	90.5	1.30	118
A2	Maternal/Newborn Care Unit (6 beds)	459.5	1.45	666
A3	Critical Care Unit (4 beds)	124.5	1.40	174
A4	Emergency	300.0	1.45	435
A5	Surgical Services			
	Surgical Suite	307.0	1.40	430
	Surgical Day Care/Same Day Admit	164.0	1.40	230
	Central Processing Department	122.0	1.20	146
A6	Diagnostic Imaging	357.0	1.40	500
A7	Laboratory Medicine/Diagnostic Services Centre			
	Laboratory	269.0	1.30	350
	Diagnostic Services Centre	193.0	1.30	251
A8	Morgue/Autopsy	37.5	1.15	43
	Subtotal Component Area, A	3 641.0		5 108
B	**Low Serviced Facilities (Post Disaster)**			
B1	Pharmacy	166.5	1.20	200
B2	Health Information Management			
	Admitting/Discharge	57.0	1.25	71
	Health Records	159.0	1.20	191
	Health Information Systems	100.0	1.20	120
	Subtotal Component Area, B	482.5		582
C	**Low Serviced Facilities (Non-Post Disaster)**			
C1	Outpatient Services			
	Shared Clinic Area	671.0	1.35	906
	Medical Day Care Area	388.0	1.35	523
C2	Psychiatric Day Centre	115.0	1.35	155
C3	Rehabilitation Services	375.0	1.20	450
C4	NAHC Administration	529.0	1.35	714
C5	Education Facilities	207.0	1.20	248

BUILDING SPACE SUMMARY

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Service Groups/Components	2000 Master Program **NSM**	Grossing Factor	2000 Master Program **GSM**
C6 Volunteers/Auxiliary Services	20.0	1.05	21
C7 Spiritual Care Services	67.0	1.20	80
C8 Main Entry Facilities	153.0	1.50	230
C9 Community Based Services			
NAHC Community Support	340.0	1.35	459
KBCHSS Community Support	1 060.0	1.35	1 431
C10 Multilevel Care Facility (86 beds)	[3 455.5]	1.60	[5 529][1]
C11 Adult Day Centre	[397.5]	1.60	[636][1]
C12 Assisted-Living Housing Units	(3 744.0)	1.28	(4 800)[2]
C13 Child Day Care Facility	(350.0)	1.25	(438)[2]
C14 Commercial/Retail Lease Space	(90.0)	1.375	(124)[2]
C15 Health Professionals Office	(2 400.0)	1.375	(3 300)[2]
Subtotal Component Area, C	3 925.0		5 217
D Industrial/Shop Facilities (Post Disaster)			
D1 Nutrition and Food Services	576.0	1.20	691
D2 Materiel Management Services	411.0	1.15	473
D3 Ambulance Station	(368.0)	1.25	(460)[2]
Subtotal Component Area, D	987.0		1 164
E Industrial/Shop Facilities (Non-Post Disaster)			
E1 Engineering and Maintenance Services	174.0	1.15	200
E2 Housekeeping Services	69.0	1.10	76
E3 Regional Linen Services	870.0	1.15	1 000
E4 Central Staff Facilities	370.0	1.15	425
Subtotal Component Area, E	1 483.0		1 701
Total Component Area	**6 395.0**		**13 772**
Unassigned Gross Area (Incl. mech., ext. wall, major circulation, etc.)			4 428
Total Building A Gross Area (Acute Care and Community Based Services)	-	-	**18 200**
Building B Gross Area for C10 and C11 (MLC/ADC)	-	-	**6 165**
Building C Gross Area for C12 (Assisted-Living)	-	-	**(4 800)[2]**
Building E Gross Area for C13 – C15, plus D3 (Other)	-	-	**(4 322)[2]**
GRAND TOTAL CAMPUS BUILDING GROSS AREA	-	-	**24 365**

Notes:

[1] *Areas in brackets [ ] have not been included in the Total Component Area below because they are already building gross areas and are accounted for separately as illustrated in Building B.*

[2] *Areas in parentheses ( ) have not been included in the Total Component Area and the Grand Total Campus Building Gross Area since these areas, including C12 – C15 and D3, are considered to be outside the current capital project funding and are to be accommodated through alternative funding arrangements.*

F3

GENERAL PLANNING CRITERIA

GENERAL PLANNING CRITERIA

INTRODUCTION

This section of the document is intended to provide an understanding of major planning criteria related to the needs of residents, patients, staff, and visitors which impact on the site as a whole, or on specific groups of functional components.

The intention of this section is not to suggest physical planning solutions, but rather to identify the functional requirements for planning that will assist the future Design Team and User Groups in the development of the most appropriate environment for people and systems as design work proceeds.

It is recognized that some of the criteria described here may not be achievable (or may be only partially achievable) due to physical and economic constraints. It is, however, considered useful here to cover all-important aspects of planning in order to reacquaint the reader and planners of the highest standards desirable.

The narrative is organized under 3 sub-headings as follows:

- Site Planning Criteria
- Building Planning Criteria
- Major Functional Groupings

SITE PLANNING CRITERIA

Building Siting and Orientation

New construction should take maximum advantage of the site's positive features. New buildings should be massed so that vehicular and pedestrian arrival sequences clearly focus on patient and visitor entries. Energy conservation should also be a determining factor in orientating the building mass. Patient and resident care areas should be located as far as possible from service courts and other potential noise sources. Considering prevailing winds and building height requirements, air-conditioning system air intakes should be located in relation to the boiler stack so that noxious products and other exhausts are not drawn into the buildings' air systems. Maximum opportunity for views to the exterior from all areas should be achieved.

Environmental Design Elements

Depending on the opportunities presented by the site, environmental design elements could be used effectively to create a dramatic and inviting outdoor space which would contribute significantly to the character of the surrounding environment. Features such as innovatively designed bus shelters, street furniture, lighting systems, kiosks, paving, landscape, fountains and artwork may be integrated in order to create a visually active, secure, and dynamic space for staff and public gatherings. These should be integrated with the proposed pedestrian linear park along the abandoned Burlington Northern railway track.

Landscape

Landscape should be an integral part of the site planning such as widened sidewalks and plazas. The development of public green space, horticultural spaces, and the retention of existing trees and provision of new trees and other vegetation would greatly enhance the image and attractiveness of all facilities.

Vehicular Circulation

General

It is assumed that residents, patients, clients, staff and visitors will continue to primarily rely on the car and transit vehicles to access the site for the foreseeable future, that a high volume of materials and supplies delivery traffic will continue on site and that therefore, vehicular movement will continue to be a major planning issue for the site.

On-site vehicular circulation systems should be capable of handling projected volumes and should include alternative routes for unanticipated interruptions of normal patterns. The network should be logical so that visitors unfamiliar with the site can readily find their way to their destination. A clear sense of direction and orientation should be provided, primarily through visual recognition of destinations. This should be supplemented by a concise graphics and signage system. The various traffic types should be separated as early as possible on approach to the site. Priority should be given to emergency, bus and patient/visitor traffic. Vehicular intersections and pedestrian crossings should be well-marked and illuminated for increased safety and security after dark.

Resident/Patient/Visitor

Routes should be clear and direct, including drives to covered drop-off points near key destinations. Drivers should be able to deliver passengers to the appropriate entry and continue to a designated parking area. Pick-up routes from the parking area to the drop-off point should not require a return to adjacent streets. Access drives should be wide enough to allow movement past waiting or parked vehicles. Weather protected seating should be provided at all pick-up/drop-off points.

Service

Service vehicle routes should be clear, direct and well marked. Service drives and courts should be screened from view by other users of the site both visually and acoustically. Grades on service drives should be eliminated where possible to minimize motor and transmission noises. Again, all air intakes should be carefully located so as to not draw in vehicle exhausts. Solid waste and morgue holding service courts should be separated from other functions. Service traffic should be separated from people traffic to the maximum extent possible.

Emergency

Emergency vehicles, including both ambulances and fire equipment, should be provided with clear, direct routes which are well marked and illuminated. The routing system should require minimum travel time and distance and should terminate as close to the destination as possible. Vertical clearances of canopies should be adequate for the largest transport and fire vehicle to be used. No other circulation system should cross this emergency route. Back-up emergency routes should be provided to eliminate possible delays caused by congestion on primary access routes. Immediate patient/visitor access to both short-term and regular parking areas should be provided.

Parking

Off-street parking facilities should be able to handle projected demands. Parking lot layouts should be orderly and logical to minimize confusion and excessive internal circulation. Parking facilities should be well lighted and located as close to patient and staff destinations as possible. Walkways and shelters should be planned in conjunction with the parking areas to minimize pedestrian/vehicular conflicts. Where assigned parking is used, preference should be given to short term users (i.e., outpatients).

Critical parking areas, such as those adjacent to Emergency, should be designed so that distraught drivers can park and leave their car without blocking circulation. Close-in staff parking should be available for evening and night shift workers to provide an increased sense of security for these employees. In addition, a reasonable number of close-in protected parking stalls should be dedicated to the handicapped.

Staff parking areas can be less direct than those for other types of traffic, since the staff will be familiar with the facility and site. However, these routes should be able to handle greater volumes of concentrated traffic than other routes, particularly during shift changes, and a drop-off point should be provided, which should be safe and secure.

Pedestrian Circulation

A general network of sidewalks should be provided to link all parts of the site. Gentle grades, not exceeding five per cent (5%), should be maintained on all sidewalks for wheelchair use. Pedestrian/vehicular conflicts should be minimized by carefully coordinating the two circulation networks. In the event conflicts cannot be avoided, crossings should be well marked and illuminated.

Upon leaving their vehicles, residents, patients and visitors should be able to directly enter the facility of destination. Entrances should be clearly identifiable by both drivers and pedestrians. Walkways should incorporate seats, handrails, curb cuts and ramps to accommodate infirm or wheelchair bound patients. Adequate lighting and sightlines should be incorporated to provide a sense of security after dark.

Exterior Signage

Exterior signage should include:

- Formal identification of key buildings fixed in an architecturally appropriate location, floodlit at night, and readable from a distance of 150 metres.
- Informal directional and operational signage integrated with urban design concepts on the site.

Utilities Planning

Utilities include water, gas, electricity, storm, sewage and communications. They are in use every day, all day, in support of all activities on site. They cost money, in terms of energy consumption, facilities, and their effect on human resources.

Good utilities planning can result in significant savings and can, indirectly, raise the level of resident and patient care satisfaction. The creative core of good utilities planning focuses on four core services: cooling, heating, electricity and communications. Planning for other utilities services must be accommodated, but plans for these should be based on strategies developed for the core services, as follows:

- Centralization: centralization of heating, cooling and electrical systems complements planning for system capacity, redundancy and flexibility.
- Future Growth: in sizing new services where future growth is likely, allow for future growth in distribution mains and space for future equipment and consider a modular approach for building systems extensions.
- Redundancy: plan for redundancy with dual site services for electricity, domestic water, natural gas and communications systems. For on-site equipment serving critical functions, plan for redundancy with either standby equipment or active equipment that can be automatically commandeered when needed.
- Flexibility and Accessibility: a lack of utilities flexibility and accessibility can prove to be more significant in limiting a building's usefulness and life expectancy than either its capacity or age. Future developments will provide for flexibility by providing looped distribution lines, ample branch-isolation valves, and adequate space for new services and maintenance access. Cable communications trays and provision of fibre optic hardware should be provided throughout the campus, in all buildings, and should form part of every minor and major capital project.
- Energy Conservation: evaluate heating, cooling and electrical loads and relationships for potential energy conservation applications, peak electrical demand shaving, cogeneration and thermal storage.

Green Space

The definition and development of green space is essential to providing a healing environment for patients, visitors and staff, and to enhancing the site's capacity as an asset of the neighbourhood. Adequate green space should be considered as integral to good resident and patient care and staff support, and part of being a good neighbour and citizen. Considerations include:

- views to green areas
- walks by and through green areas
- driving by or through green areas
- relaxation and meditation
- lunches, meetings and socializing of staff, visitors and patients

Key planning strategies must include the definition, enhancement and development of green space as integral to the project. More specifically, these strategies should focus on the following areas:

- providing green space immediately adjacent to the main cafeteria
- developing secure and directly accessible green spaces directly from the resident care "houses", pediatric and palliative care areas if possible
- as part of being a good neighbour, develop substantial green "buffer" area between the site and the street
- enhancing the linear parkway along the abandoned Burlington Northern railway line

Outdoor Activity Areas

Outdoor activity areas or gardens should be provided that are south or southwest facing and partially weather and shade protected for prolonging outdoor activities. An external, protected sitting area should also be provided at the main entrance for use by all persons.

BUILDING PLANNING CRITERIA

Healthcare Campus

A trend in healthcare planning and design has been to view the concept of hospital as a single building entity. Solutions that resulted in facilities of 1.5 to 2.0 million square feet were not uncommon. The result was floor plates with very large areas that were designed to provide significant opportunities to expand individual departments in response to changing demands (e.g., by locating "hard" spaces next to "soft" spaces). Conversely, departments located deep within the floor plates and not adjacent to exterior soft space (or walls) required the relocation of other departments in order to accommodate any expansion. This domino effect resulted in increased cost to an expansion project and in some cases to its cancellation. Alternatively, compromised solutions were developed that physically split the department resulting in dysfunctional arrangements and increased operating costs.

The concept of the healthcare campus, not unlike a university campus, allows for a progressive development over the lifetime of the campus without the need to achieve an "ultimate solution". Issues of expansion, adjacency and sustainability of the facilities as a whole, as well as the individual departments, might best be served by a campus approach. While we assume that our healthcare buildings will serve our needs for 30+ years, the campus concept allows for continual renewal without limit through the strategic removal of individual buildings that have outlived their useful life. This ability to selectively renew, replace and expand individual elements without compromising the ongoing operation of the entire organization should be carefully considered. Additional benefits to the residents, patients and staff concerning accessibility, wayfinding and access to daylight, while not specific to issues of flexibility, are opportunities for environments that are scaled to the comfort of the individual and organized as links to the future.

"Town Centre" Concept

Consideration should be given to developing a "town centre" space, which would provide a focus for the Campus's circulation systems giving access to all areas.

Considerations of Building Type

Major health centres are like urban centres in that they support large numbers of people in a wide variety of work environments. They also accommodate a broad range of space-types, as does a city or town, including: commercial space (offices/medical offices and practices), industrial space (materiel management, engineering and maintenance shops, food production), residential space (patient and resident bed-rooms, bathrooms, living space) and high tech space (diagnostic imaging, clinical and research laboratories, surgical suite, etc.).

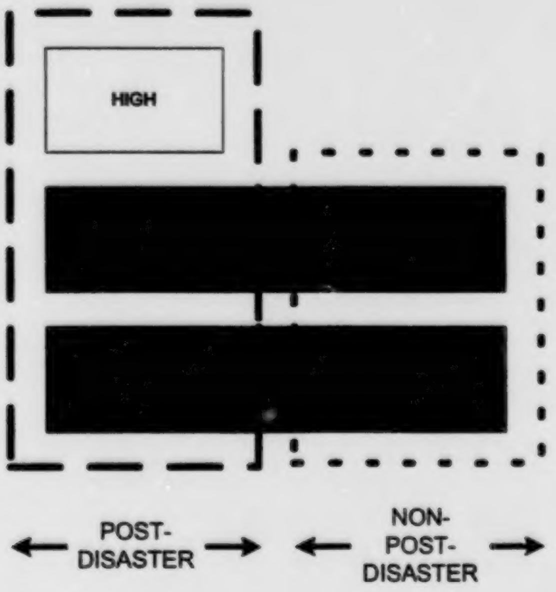
Some spaces in an acute hospital are recognized as part of critical areas that should be post disaster capable while a majority of other spaces do not need to be designed to this capacity.

Locating space in specific building-types, which may attract different design standards and different unit costs to construct, is worthy of consideration at the master planning stage.

Functional components in this program are organized by service groups which signify similarities of physical and support systems requirements and need for post or non-post disaster design. There are 6 main service groups as follows:

- High/Medium Serviced Facilities (Post Disaster)
- Low Serviced Facilities (Post Disaster)
- Low Serviced Facilities (Non-Post Disaster)
- Industrial/Shop Facilities (Post Disaster)
- Industrial/Shop Facilities (Non-Post Disaster)

The physical plan should achieve a physically grouping of like kinds of space wherever possible.



Green Buildings

This project must conform to the 'green' performance standards established by the provincial government's Green Buildings BC New Building Program.

Operational Efficiency/Quality of Service

The operational efficiency and effectiveness of caregivers in healthcare settings are greatly influenced by the physical design of facilities. Hospitals are labour-intensive institutions, which requires considerable movement of materials, staff, patients and visitors. The planning and design process must result in a physical plan and the organization of components that will minimize operating costs and maximize the quality of service.

Image and Environment

The external image of different buildings on the campus should make a symbolic statement about the values that the NAHC embodies.

All planning strategies should be considered within the context of advancing resident and patient care and the enhancement of the Health Campus as a humanistic and unthreatening refuge for healing and access to health and wellness. There are many possible strategies for achieving this goal, examples include:

- provision of the main entry outdoor and indoor space as a familiar, non-institutional area by making it a lively destination for visitors, residents, clients and patients, provision of varying kiosk retail and food functions, etc.;
- provision of an art program to invite community artists to display their work on a permanent and temporary basis within the buildings and on the site;
- maintenance of a clear distinction between those areas of the facilities which are fully accessible to the public and those that are secured private areas/restricted to family or staff access only.

Residents, patients and visitors entering the Campus may be disoriented or anxious and many will be older patients who may have diminished cognitive and physical abilities. Every effort should be made to minimize the potentially intimidating nature of the typical institutional setting. Highly technical areas should be visually and acoustically isolated. Patients, visitors and staff should perceive the environment as open and accessible rather than regimented and intimidating.

The Main Entry/Lobby Facilities and Admitting as common destinations and often the location where first impressions are made should be easily accessible and welcoming to visitors.

Views of the exterior and natural light should be provided from/to all resident and patient care areas and staff work areas wherever possible. The psychological impact of the facilities concerns not only the resident or patient, but family, visitors and staff as well.

A general image of public accessibility should be provided which will be enhanced through the provision of "retail type" space located in the public area of the Campus; by encouraging public use of the proposed new café; and by the provision of a single "front door" focal point. (See also Site Planning Criteria section in this document.)

Therapeutic Healing Environment

A fundamental objective in the development of the Health Campus will be an emphasis on a "therapeutic home-like environment", which should encompass not only the concept of specific, identifiable places where individuals go for care, but also the concept of the therapeutic potential of all settings in which people find themselves, be they residents, patients, clients, staff or visitors. Within this broad definition, a setting may be judged to be therapeutic if it supports or facilitates the goals of the user, and judged non-therapeutic if it ignores or, at worst, impedes those goals. The design of care settings is influenced by many factors including building and life safety codes, medical procedures and protocols, operational issues, staff preferences, and the configuration and condition of existing facilities. The goal to create therapeutic healing environments puts the resident, patient and client at the very top of this list.

Given that this is the case, the physical environment should be designed to eliminate or minimize environment-related, stress-producing factors

Resident Care Environment

While a high degree of flexibility in use of all the resident beds implies an integrated layout, the building plan should provide an appropriately discrete residential environment for all care areas.

The design should recognize that the residents consider the facility as their home, and should allow for the privacy and dignity of the residents to be guaranteed as well as allowing them the opportunity to be part of the general milieu of the Campus whenever they choose.

General Space Characteristics

Building space should be provided to generally allow for a maximum number of horizontal relationships between components, efficient intra-component clustering of spaces, and multiple circulation systems for separation of traffic types. These conditions may be achieved most readily with large, "deep plan" blocks of space. However, in the interests of staff and patient comfort and well-being, such potentially windowless "deep plan" space should be minimized wherever not critical for the functions being planned within it, in favour of space that will maximize the accessibility of all users to external views and natural light.

It should be noted that accessibility to views and natural light can be achieved by means of internal courtyards and clerestorey roof lights as well as by locations close to an external wall.

All new buildings should be designed for potential future growth, vertically and/or horizontally, but especially in areas where the need for expansion has been specifically highlighted (e.g., outpatient areas).

Flexibility

Versatility in the utilization of inpatient care facilities is to be achieved by maintaining typical inpatient unit sizes and configurations wherever possible. With the exception of the special purpose-built units, all inpatient care programs will be accommodated in general purpose units planned to accept a variety of programs in the future.

Versatility in the utilization of outpatient care facilities is to be achieved by:

- centralization of most outpatient components
- consolidation of modular general space
- segregation of special purpose or highly services (mechanical systems) space

In the highly technical (diagnostic and treatment) areas, large, open blocks of space with wide structural bays and minimum column area on each floor should be provided to allow for:

- a maximum of horizontal relationships between components
- efficient intra-component clustering of spaces
- multiple circulation systems to facilitate separation of traffic types
- maximum flexibility for technical or functional renovation, and/or future conversion to other uses

Building Accessibility

Public orientation to and from all parts of the Campus should be achieved by emphasis on "first time" entrances where personal guidance and building graphics/signage can introduce the interior circulation system to the user.

The ambulance entrance to Emergency should be distinct from other entrances.

Provision of a secondary covered ambulance drop-off point to serve the inter-facility transport service (e.g., other MLC clients coming for diagnostic testing).

The service vehicle loading/unloading area(s) should be distinct from other entrances.

All areas must be accessible by persons with disabilities.

All parts of the structure(s) must be accessible from the exterior by fire fighting equipment.

General Circulation

Interior Horizontal

Interior horizontal circulation systems should provide clear and direct access to all areas of all buildings. Opportunities for orientation to the rest of the facility should be provided at as many points as possible.

Separate horizontal circulation routes should be provided for clean/sterile and soiled goods where possible.

Interior Vertical

Interior vertical traffic also requires similar segregation. Public/outpatient traffic should be provided with separate elevator systems from staff/inpatient traffic.

Separate vertical circulation routes should be provided for clean/sterile, soiled goods and garbage.

Internal Circulation System

A direct and easily understood internal circulation system of corridors is essential to the effective movement of staff and materials through the Campus, and for orienting and guiding visitors, residents and patients.

A simple ground floor interior circulation framework will be developed as an integral part of the new development. It will act as the primary functional organizing and orientation element of the ground floor and will improve the flow of materials and people by being as direct as practical, and by differentiating public and service circulation to the extent practical.

Primary elements of this framework include:

- Public/Visitor Circulation

  Direct, primarily public route from the main entrance to all areas of the buildings, in particular to vertical circulation nodes (elevators, convenience stairs). Orientation devices should be provided at as many points as possible.

  Stairways should be used to augment personnel movement between floors with "convenience" stairways located adjacent to elevators and elsewhere throughout the building. Stairwells should be pleasantly designed, bright and properly lighted.

There should be a clear and direct connection between elevators and building entrances and from elevators to all areas within the building. Passenger elevators should be clearly identifiable and service elevators should not be obvious to the public.

- Materials Circulation

  Materials circulation routes should be segregated from public/visitor/patient circulation routes whenever possible. Separate, restricted or dedicated horizontal circulation system between materiel departments (supplies, food, etc.) and elevators should be provided. Dedicated elevators should be provided for materiel movement with separate elevators for clean/sterile and soiled items. Laundry and garbage chutes should be considered.

MAJOR FUNCTIONAL GROUPINGS

In general, the successful functional organization of the Health Campus involves locating functions to both minimize unnecessary movement of people and materials, and to concentrate more capital intensive, expensive space and equipment together. In other words, strategies of "one stop shopping" and locating "like functions with like functions", can have substantial operating and capital economies and should be considered as general strategies for the development of the campus.

Also, certain components within the Campus require close groupings with others for one or more reasons (e.g., sharing of support facilities and staff, accessibility, future flexibility for shifting boundaries, expansion etc.). The following diagrams illustrate the key groupings that should be achieved wherever possible. In some cases a "higher priority" for adjacency applies to selected components within each group.

Outpatient Services Group

Outpatient services, including outpatient clinics and day care programs, should be centralized, as much as possible, to consolidate ambulatory patient traffic and should be oriented to a major public entry, preferably located at grade level.

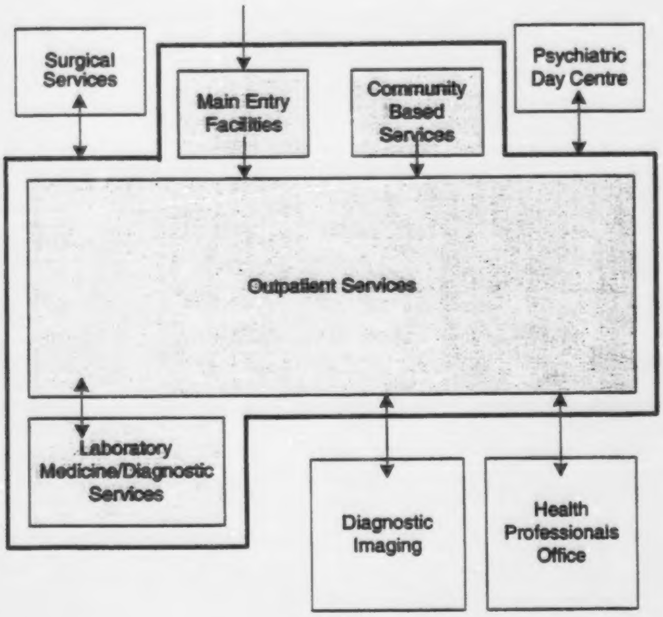
An Outpatient Services Group should be developed and comprised of the following components:

High Priority Adjacency

- Outpatient Services
- Main Entry Facilities
- Community Based Services
- Laboratory Medicine/Diagnostic Services Centre

Lower Priority Adjacency

- Surgical Services
- Psychiatric Day Centre
- Diagnostic Imaging
- Health Professionals Office


Surgical Services
Main Entry Facilities
Community Based Services
Psychiatric Day Centre
Outpatient Services
Laboratory Medicine/Diagnostic Services
Diagnostic Imaging
Health Professionals Office

Emergency Services Group

Emergency services together with supporting diagnostic and treatment areas should be centralized as much as possible to shorten travel distances for staff and patients and to minimize the time it takes to deliver care to critically ill patients.

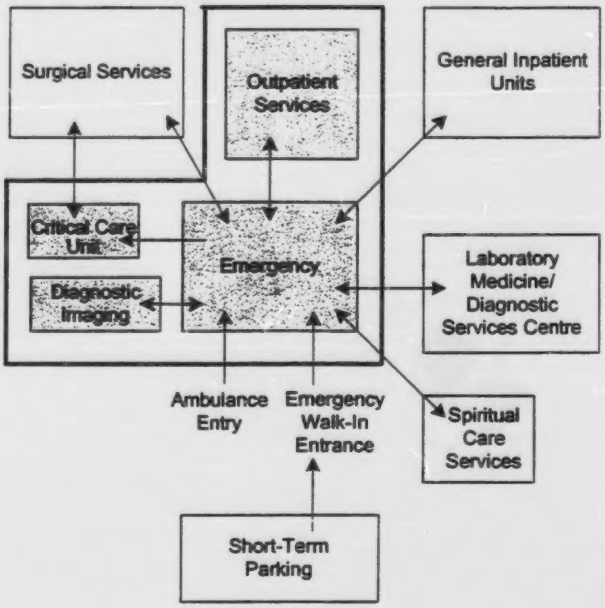
An Emergency Services Group should be developed and comprised of the following components:

High Priority Adjacency

- Emergency
- Diagnostic Imaging
- Outpatient Services
- Critical Care Unit

Lower Priority Adjacency

- General Inpatient Units (Psychiatric short-stay observation)
- Surgical Services
- Laboratory Medicine/Diagnostic Services Centre
- Spiritual Care Services


Surgical Services
Outpatient Services
General Inpatient Units
Critical Care Unit
Emergency
Diagnostic Imaging
Laboratory Medicine/ Diagnostic Services Centre
Ambulance Entry
Emergency Walk-In Entrance
Spiritual Care Services
Short-Term Parking

Residential Care Group

Residential care services should be centralized to minimize traveling distances for residents and staff.

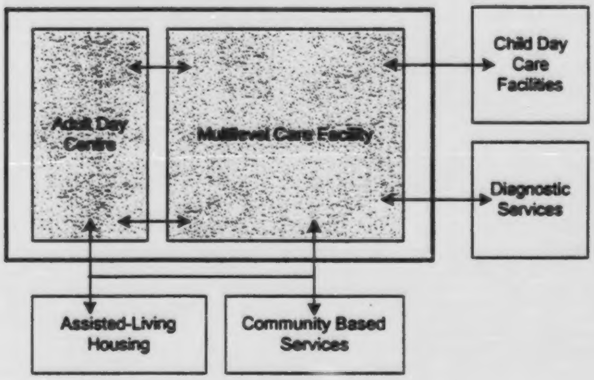
The Residential Care Group should be developed and comprised of the following components:

High Priority Adjacency

- Multilevel Care Facility
- Adult Day Centre

Lower Priority Adjacency

- Community Based Services
- Child Day Care Facilities
- Assisted-Living Housing
- Diagnostic Services (e.g., Diagnostic Imaging, Lab, etc.)


Adult Day Centre
Multilevel Care Facility
Child Day Care Facilities
Diagnostic Services
Assisted-Living Housing
Community Based Services

Perinatal Services Group

Perinatal services should be centralized as much as possible to provide appropriate progressive patient care, ensure implementation of a family-centred care approach, promote efficient use of resources and provide flexibility for future growth.

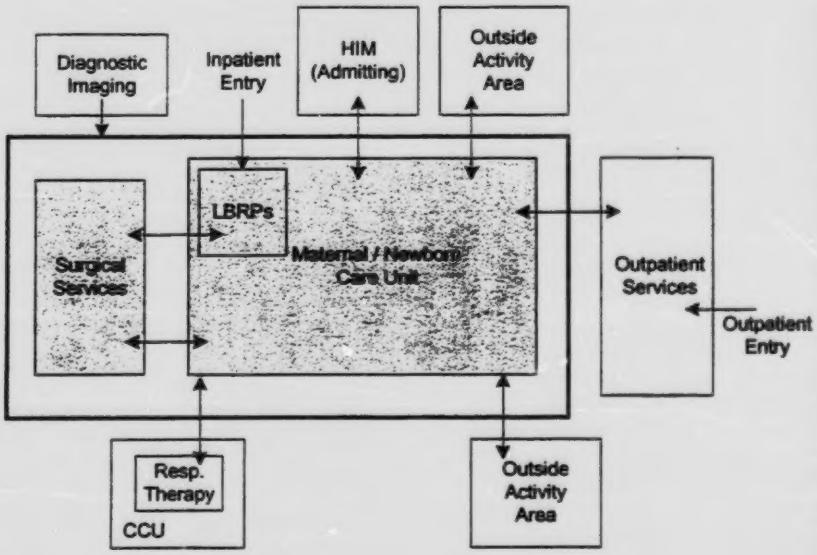
A Perinatal Services Group should be developed and comprised of the following components:

High Priority Adjacency

- Maternal/Newborn Care Unit
- Surgical Services

Lower Priority Adjacency

- Outpatient Services
- Critical Care Unit (Respiratory Therapy)
- Health Information Management (Admitting)
- Diagnostic Imaging


Diagnostic Imaging
Inpatient Entry
HIM (Admitting)
Outside Activity Area
LBRPs
Surgical Services
Maternal / Newborn Care Unit
Outpatient Services
Outpatient Entry
Resp. Therapy
CCU
Outside Activity Area

Public Facilities Group

Public facilities should be centralized as much as possible to ensure orientation of patients, especially first-time visitors, and to promote a clear focus of public activity and an image of public accessibility.

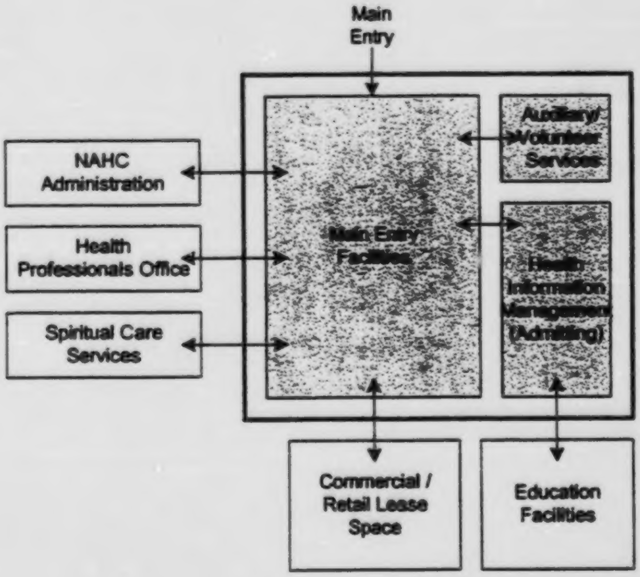
A Public Facilities Group should be developed and comprised of the following components:

High Priority Adjacency

- Main Entry Facilities
- Health Information Management (Admitting)
- Auxiliary/Volunteer Services

Lower Priority Adjacency

- Health Professionals Office
- Commercial/Retail Lease Space
- Spiritual Care Services
- Education Facilities
- NAHC Administration


Main Entry
NAHC Administration
Health Professionals Office
Spiritual Care Services
Main Entry Facilities
Auxiliary/ Volunteer Services
Health Information Management (Admitting)
Commercial / Retail Lease Space
Education Facilities

Mental Health/Psychiatric Care Group

The Mental Health/Psychiatric Program group should be located on-grade in order to allow for opportunities of shared support space, shared exterior activity space, and shared direct entry.

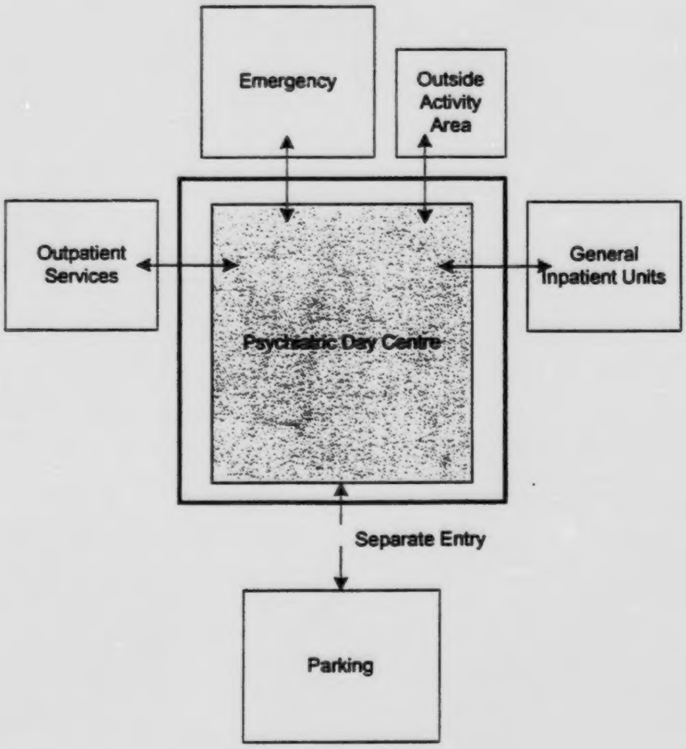
A Mental Health/Psychiatric Program group should be developed and should be comprised of the following:

High Priority Adjacency

- Psychiatric Day Centre
- Exterior Parking and Grade Access

Lower Priority Adjacency

- Emergency
- Outpatient Services
- General Inpatient Units (medical beds)


Emergency
Outside Activity Area
Outpatient Services
General Inpatient Units
Psychiatric Day Centre
Separate Entry
Parking

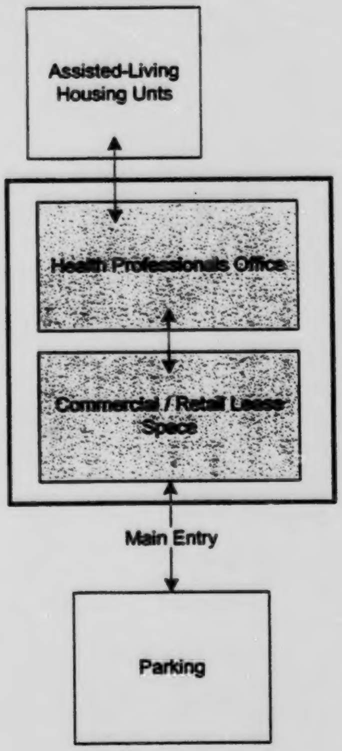
Office/Commercial/Retail Group

The Office/Commercial/Retail group should be located on-grade in order to allow for opportunities of client/customer convenience and access and shared entry.

A Office/Commercial/Retail group should be developed and should be comprised of the following:

High Priority Adjacency
- Main Entry
- Commercial/Retail Lease Space
- Health Professionals Office

Lower Priority Adjacency
- Exterior Parking and Grade Access
- Assisted-Living Housing Units


Assisted-Living Housing Unts
Health Professionals Office
Commercial / Retail Lease Space
Main Entry
Parking

COMPONENT PLANNING CRITERIA

COMPONENT PLANNING CRITERIA

INTRODUCTION

The basic "building blocks" which will be used to physically assemble each hospital project into a cohesive whole are called FUNCTIONAL COMPONENTS. A functional component can be defined as a grouping of activities, and assigned spaces, which are related by their common mission to satisfy a specific function or operation within a hospital. A functional component may or may not be synonymous with a department since the term "department" refers to an administrative organizational structure, not to a functional planning structure. Therefore, a department may consist of one or more functional components.

The functional components are organized to reflect a number of groupings reflecting the type of facility, which will likely be required to house them, as follows:

A High/Medium Serviced Facilities (Post Disaster)

A1 General Inpatient Units
A2 Maternal/Newborn Care Unit
A3 Critical Care Unit
A4 Emergency
A5 Surgical Services
A6 Diagnostic Imaging
A7 Laboratory Medicine/Diagnostic Services
A8 Morgue/Autopsy

B Low Serviced Facilities (Post Disaster)

B1 Pharmacy
B2 Health Information Management

C Low Serviced Facilities (Non-Post Disaster)

C1 Outpatient Services
C2 Psychiatric Day Centre
C3 Rehabilitation Services
C4 NAHC Administration
C5 Education Facilities
C6 Volunteers/Auxiliary Services
C7 Spiritual Care Services
C8 Main Entry Facilities
C9 Community Based Services
C10 Multilevel Care Facility
C11 Adult Day Centre
C12 Assisted-Living Housing Units
C13 Child Day Care Facility
C14 Commercial/Retail Lease Space
C15 Health Professionals Office

D Industrial/Shop Facilities (Post Disaster)

D1 Nutrition and Food Services
D2 Materiel Management Services
D3 Ambulance Station

E Industrial/Shop Facilities (Non-Post Disaster)

E1 Engineering and Maintenance Services
E2 Housekeeping Services
E2 Regional Linen Services
E4 Central Staff Facilities

High/Medium Serviced Facilities generally refers to components requiring a high to medium level of engineering servicing (such as medical gases, enhanced ventilation and pressurization, heavy electrical servicing, etc.), housing high-tech in-contract medical equipment and requiring a high to medium level of architectural detailing and finishes.

Low Serviced Facilities generally refers to components requiring a low level of engineering services normally found in commercial office buildings or community based medical office facilities housing little in-contract medical equipment or residential housing and requiring normal (commercial housing) levels of architectural detailing and finishes. They typically require flexible, open space planning with relatively easily moveable partitions, good elevator and, in many cases, good public access as there is usually considerable people traffic around them.

Industrial/Shop Facilities generally refers to components that can be housed in warehouse-type facilities requiring large open areas, higher floor-to-ceiling heights, low levels of engineering services, housing some in-contract, non-medical equipment and requiring a minimal level of architectural detailing and finishes. These facilities typically require good access to loading docks, exterior delivery/service vehicle routes and, sometimes, to outside 'service yard' areas.

Functional components for each facility type are presented on the following pages and each includes information under the following headings:

Scope Description provides brief information on what key functions a component includes (or excludes) and the major factors determining its size. It is not intended that this description includes a listing of all individual room requirements, but rather that it identifies only those specific factors that are required to estimate preliminary gross space requirements.

Estimate Space Need documents the gross square meters programmed to accommodate the anticipated functions and activities of the component. These grossly calculated areas are subject to refinement through subsequent detailed facility programming review.

Location Priorities documents the priorities for physical relationship between the subject component and other components. These priorities are generally limited to five in number as this is considered the maximum number of relationships that an architect can consider at one time when viewing physical alternatives in three dimensions.

A1 General Inpatient Units
A2 Maternal/Newborn Care Unit
A3 Critical Care Unit
A4 Emergency
A5 Surgical Services
A6 Diagnostic Imaging
A7 Laboratory Medicine/Diagnostic Services
A8 Morgue/Autopsy

A High/Medium Serviced Facilities (Post Disaster)

The following table presents the Master Program for the functional components to be incorporated into the new Health Campus.

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
A1 **General Inpatient Units**	**Inpatient Units** • 50 beds serving medical, surgical, pediatric and transition/activation/ palliative care patients with 26 private rooms and 12 semi-private rooms planned in two 25-bed inpatient units	1 765	1. Diagnostic and Treatment Services 2. Critical Care Units 3. Surgical Suite 4. Support Services
	Shared Support Area • shared support areas for all 60 beds (incl. Maternal and Critical Care) such as a treatment room, quiet/consultation room, family sleep room, etc.	118	
	Total:	**1 883**	
A2 **Maternal/ Newborn Care Unit**	• Primary Level 1 facility with 350 future annual deliveries (2015), incl. 50 C-sections • 6 LBRP's configured as private rooms, each room including ensuite toilet and shower/Jacuzzi tub, family accommodation and equipment storage supporting both antepartum, birthing and postpartum care • 1 operating/delivery room for high risk and C-section deliveries included in the Surgical Suite • Includes a triage/pre-admission/ early labour lounge area • Excludes fetal assessment/ antepartum clinics included in Ambulatory Care • 4 bassinets for transition/ observation, nursery and well baby 'park'		1. Surgical Suite 2. Emergency 3. Diagnostic and Treatment Services
	Total:	**666**	

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
A3 **Critical Care Unit**	• 4 critical care beds with telemetry with a capacity of 1,000 patient days per year		1. Emergency 2. Surgical Suite
	Total:	**174**	
A4 **Emergency**	• Capacity of 14,000 annual unscheduled visits assuming 10% emergent, 40% urgent, 50% non-urgent/fast track • Total of 10 patient positions incl. 1 trauma, 1 psych secure room, 8 acute/ fast-track, 1 peds • 4-bed clinical decision unit • Area for ambulance and paramedic support teams • Security/police workstations		1. Ambulance Entrance 2. Diagnostic Imaging 3. Critical Care Unit
	Total:	**435**	
A5 **Surgical Services**	**Surgical Suite** • Future workload capacity of 3,500 surgical cases, 2,500 OP & 1,000 IP • 2 general, 1 cystoscopy/multipurpose operating rooms • PACU with 6 positions, 1 for isolation	430	1. Emergency 2. Critical Care Unit
	Surgical Day Care/Same Day Admit • Day surgery prep/recovery area w/8 stretcher beds/recliners	230	
	Central Processing Department • Decontamination area including cart wash area and soiled linen holding • Packaging and assembly area • Sterilization area including sterile cart marshalling area • Sterile stores and case cart staging (O.R. and maternity) • Excludes linen packaging assumed provided by Regional Linen Services	146	
	Total:	**806**	

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
A6 Diagnostic Imaging (incl. Nuclear Medicine)	• Assumes digital imaging and PACs • Assumes use of teleradiography • A total of 27,500 exams per year including: – 16,000 General Radiography/ Fluoroscopy exams - 2 rms – 5,500 Ultrasound exams – 3 rms – 3,000 Mammography exams, screening & diagnostic - 1 room – Assumes MRI mobile regional unit pad & connector – Assumes developmental space provided for future CT suite • 7 years active film storage (to be phased out in longer term future and used for Nuclear Med.) • Post-procedure recovery area w/2 stretcher positions & nurse station to be provided in Outpatient Services **Total:**	**500**	1. Emergency 2. Outpatient Services
A7 Laboratory Medicine/ Diagnostic Services	**Clinical Laboratory** • Future annual units of 2 million, incl. Regional Pathology @ 300,000 units • Core laboratory for accessioning/ testing/ specimen preparation area, data processing and laboratory routine procedures • Includes: Clinical Pathology – Chemistry – Hemalotogry – Blood Bank/ Immunology – Microbiology Anatomical Pathology – Histology • Includes diagnostic services estimated workload and procedure rooms as follows:	350	1. Outpatient Services 2. Emergency 3. Critical Care Units 4. Inpatient Units
	Diagnostic Services Centre Outpatient Specimen Collection Cardiology Diagnostics: – 5,500 ECG exams – 6,000 holter monitor units	251	

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
	– 55,000 stress test units Pulmonary Diagnostics: – 6,000 PF assessment units Neurology Diagnostics: – 800 EEG exams – 200 Evoked Response tests requiring: – 2 ECG rooms – 1 holter monitoring room – one, 2-position stress testing room – 1 pulmonary testing room – 1 EEG room • Excludes Morgue & Autopsy area (see below) **Total:**	**601**	
A8 Morgue/Autopsy	Morgue & Autopsy • Capacity for 100 annual autopsies • Autopsy room with 1 position and cold storage/holding room for 6 bodies • Support area including family viewing room, staff change and shower area **Total:**	**43**	1. Hearse Access Area 2. Laboratory

B1 Pharmacy
B2 Health Information Management

B Low Serviced Facilities (Post Disaster)

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
B1 **Pharmacy**	• 55,000 inpatient prescription/unit doses/year • 25,000 outpatient prescription/unit doses/year • 500 TPN mixtures/year • 4,000 CIVA preps/year • Unit dose distribution for all acute and long term care medications • Administration / clinical pharmacy / teaching area including 2 offices, conference/drug information library, counselling and research offices • Main pharmacy storage located in this component • Excludes shared clinical office space in: – Inpatient Units – Residential Care Units		1. Outpatient Services 2. Inpatient Units 3. Materiel Management (Receiving/Shipping)
	Total:	**200**	
B2 **Health Information Management**	**Admitting/Discharge (Central Registry)** • Includes central patient registration and booking, 1 office, 3 admitting cubicles, 2 booking clerks • Excludes switchboard call centre and help desk located in NAHC Administration (see C3 Rehabilitation Services)	71	1. Outpatient Services
	Health Records • 10 years active health records storage (to be phased out in longer term future) • 1 manager/supervisor office • 9 workstations for technical/clerical/ transcription staff • Assumes no transcription workstations off-site • Incomplete chart/dictation/mail area	191	
	Health Information Systems • Central computer/server room (to be located with PBX, telephone equipment room)	120	

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
	Administrative area with 4 offices/ workstations for senior staff, meeting room • Support areas for equipment staging, storage and testing/ repair • Training laboratory with 8 stations • Excludes 1 office located in NAHC Administration		
	Total:	**382**	

C1	Outpatient Services
C2	Psychiatric Day Centre
C3	Rehabilitation Services
C4	NAHC Administration
C5	Education Facilities
C6	Volunteers/Auxiliary Services
C7	Spiritual Care Services
C8	Main Entry Facilities
C9	Community Based Services
C10	Multilevel Care Facility
C11	Adult Day Centre
C12	Assisted-Living Housing Units
C13	Child Day Care Facility
C14	Commercial/Retail Lease Space
C15	Health Professionals Office

C - Low Serviced Facilities (Non-Post Disaster)

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
C1 Outpatient Services	**Shared Clinic Area** • A multidisciplinary, integrated, care centre treating illness as well as promoting wellness, disease prevention, and risk reduction, including metabolic and diabetes education, stroke prevention, COPD rehab/education, cardiac rehab, employee wellness through fitness, etc., including a treatment kitchen exercise room, large and small group counselling rooms and support staff offices • Overall estimated workload of approximately 20,000 annual visits • Ambulatory Care administration, including general patient waiting area, offices for Director, Manager and other allied health staff, multi-purpose room • Multipurpose shared treatment/ consultation, office/ workroom space incl. 8 exam/consultation rooms for shared clinics & services • Specialty treatment/consultation, office workroom space incl. dedicated exam/consultation rooms for specialty clinics & services supporting: – Pre-Admission Clinic – Cast Clinic – Enterostomal Therapy – Diatetic Counseling – Renal Dialysis	906	1. Main Outpatient Entry 2. Diagnostic Imaging 3. Laboratory Medicine/ Diagnostic Service Centre 4. Pharmacy 5. Surgical Services
	Medical / General Day Care Area • General medical/surgical day care procedures with an estimated workload and procedure rooms as follows: – 1,000 minor surgical/medical procedures – 1,000 ophthalmology procedures – 500 endoscopies – 250 anaesthetic clinic visits for pain and symptom management – 250 IV therapy procedures	523	

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
	– 2,000 chemotherapy treatments requiring: – 2 minor surgical procedure rooms – 1 eye surgical procedure room – 2 endoscopy rooms – 1 cystoscopy room – 12 stretchers, plus recliners general day care/ treatment recovery area, including recovery of imaging patients (see Diagnostic Imaging)		
	Total:	1 429	
C2 Psychiatric Day Centre	• 2,500 annual open cases including adult acute and elderly cases • Up to 10 clients present at one time • Up to 5 staff on duty at one time, including up to 3 staff from Mental Health Services • Chronic mental health drop-in centre to continue in the "Clubhouse" in downtown Nelson		1. Outpatient Services 2. Main Entry 3. Acute Care Unit
	Total:	155	
C3 Rehabilitation Services	• Assumes a workload of 12,000 PT/ OT attendances, 4,000 IP attendances and 8,000 OP attendances • Assumes most IP work provided centrally • Includes 6 treatment cubicles and gym • Include hydrotherapy and a therapy pool • Incl. ADL kitchen, bathroom and splinting area in Easy Street format		1. Main Outpatient Entry 2. General Medical/ Surgical Inpatient Units
	Total:	450	

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Component	Scope Description	Estimated Space Need CGSM	Location Priorities
C4 NAHC Administration	• 1 office NAHC CEO • 7 offices, senior administration (incl. Chief of Staff) • 3 workstations, clerical support • 1 office Planning, Research & Utilization Management • 12 Human Resource staff : 6 offices 6 workstations • 8 Finance staff offices/workstations 4 offices 4 workstations • Foundation – 1 workstation • Shared support areas including Council board room, meeting/ conference room, storage, washrooms		1. Main Entry 2. Outpatient Services
	Total:	714	
C5 Education Facilities	• Large meeting rooms, including 2 @ 40 seats, subdivisable into 2 rooms • Small meeting rooms, including 2 @ 8-10 seats • Sound/projection/media equipment storage room • Foyer for 20 people • Resource Library • Large meetings of over 50 persons to be held in bookable facilities in Selkirk College, directly adjacent to the Health Campus		1. Outpatient Services 2. Nutrition & Food Services (Cafeteria) 3. Main Lobby and Retail 4. Main Traffic Corridor
	Total:	248	
C6 Volunteers/ Auxiliary Services	• Includes workroom/coat room for up to 10 volunteers • Volunteer coordination to be conducted from Human Resources (see C3 NAHC Administration) • Excludes gift shop (see C7 Main Entry Facilities)		1. Main Entry Facilities
	Total:	21	

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
C7 **Spiritual Care Services**	• 1 office for spiritual care coordinator and visiting clergy • Spiritual multipurpose room with seating for 20 • Storage cupboards for furniture and objects required for spiritual care activities		1. Main Entry 2. Assisted-Living Units 3. Multilevel Care 4. Inpatient Units
	Total:	**80**	
C8 **Main Entry Facilities**	• Waiting/display area with 30 seats • Information kiosk (for volunteers) • Reception/cashier counter • Other undesignated retail functions (e.g., coffee wagon service, book service, ATM machine, vending machine, lottery booth, hair salon) • Gift shop		1. Main Entrance 2. Outpatient Services 3. Emergency (Admitting)
	Total:	**230**	
C9 **Community Based Services**	**NAHC Services** • Community Based Services Admin: 2 offices 3 workstations • Home Support Program: 1 office 5 workstations • Transportation Program: 2 offices 2 workstations • Community Education Services: 1 office 2 workstations • 4 shared offices/workstations for: Seniors One Stop Info & Referral Services (1), Special Needs Community Living Programs (1), Life After Birth(2), CAPC (2), Pregnancy Outreach Program (1), Nelson & District Hospice (1). • Interview room • Meeting space for 25 persons • Child minding area	455	1. Outpatient Services 2. Adult Day Centre 3. Main Entry

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
	• Community kitchen • Equipment/support areas • File storage area		
	KBCHSS Services • Mental Health Services for 24 staff, plus client service areas • Continuing Care Services for 18 staff, plus client service areas • Community Health Services for 16 staff, plus client service areas	1 431	
	Total:	**1 890**	
C10 **Multilevel Care Facility**	• 86-bed MLC facility organized in 3-20 bed houses, plus 1-16 bed house • The number of houses accommodating residents with dementia to be capable of being varied from 3 houses to 4 houses including wandering loops • Each house to include food preparation, dining and activity space for 20-26 residents • All bedrooms to be single, with up to 4 having doors or removable partitions to accommodate couples in adjoining rooms. • Common support areas including family dining area, bathing facilities, meeting/conference, activity room, staff offices • Hairdressing services to be accessed in Health Campus retail facilities		1. Adult Day Centre 2. Assisted-Living Housing 3. Retail Services
	Total:	**[5 529]**	
C11 **Adult Day Centre**	• 9,855 annual client attendance days • Capacity of 30 clients on site at one time with special programming and space for clients with dementia • 1 office, 4 workstations • Recreation area for e.g. exercise classes, dancing • Crafts area incl. woodworking, kiln		1. Main Entry 2. Multilevel Care Facility 3. Nutrition and Food Services

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
	• 2 dining areas to seat 20 and 10 clients • Small kitchen/buffet with meals and food supplies to be received from Nutrition and Food Services • 2 multipurpose/quiet rooms for dementia clients • 1 office, 2 workstations for dementia program • Meals on Wheels setup area		
	Total:	**[636]**	
C12 **Assisted-Living Housing Units**	• 60 1-bedroom suites @ 54 m^2 each • Health Campus Cafeteria to be utilized by those residents who do not wish to prepare their own meals • Recreation facilities to be accessed in other Health Centre facilities such as Adult Day Centre and Health Centre Fitness Facility • Office for resident manager		1. Adult Day Centre 2. Cafeteria 3. Multilevel Care Facility
	Total:	**(4 800)**	
C13 **Child Day Care Facility**	• Assume provision for a total of 40 children consisting of 20 pre-school, 10 toddlers and 10 infants • Includes food preparation area, activity spaces, nap area, crib room • Need for a minimum of 300 m^2 of secured outdoor space		1. Parking & Separate Entry 2. Outdoor Play Area 3. Multilevel Care Facility
	Total:	**(438)**	
C14 **Commercial / Retail Lease Space**	• Provision for 4 retail enterprises such as: – Beverage bar e.g., juices, coffee, teas – Sandwich/submarine shop – Health food/nutrition shop		1. Main Entry 2. Outpatient Services
	Total:	**(124)**	

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
C15 Health Professionals Offices	• 26 offices in total, including: physicians dentists, and other health arts practitioners		1. Main Entry 2. Outpatient Services
	Total:	**(3 300)**	

D1 Nutrition and Food Services
D2 Materiel Management Services
D3 Ambulance Station

D Industrial/Shop Facilities (Post Disaster)

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
D1 **Nutrition and Food Services**	• Total 80,000 meal days including acute care, multilevel care, assisted-living, meals-on-wheels, cafeteria and catering • Cook-serve production kitchen • Centralized dishwashing • Cafeteria with 200 seats • 1 office Nutrition Services supervisory staff • Dietician offices located with acute care facilities **Total:**	**691**	1. Materiel Services 2. Inpatient Units 3. Central Education
D2 **Materiel Management Services**	• Bulk receiving including loading dock and breakdown area, garbage handling and recycle area • Bulk stores area including data entry, cart staging area, safety/ disaster stock, non-perishable food supplies, active equipment storage, flammable storage • Recycling area • Delivery services and mail services • 1 office, 6 workstations • Includes 2 general loading bays, 1 bay for laundry/linen, 1 bay for courier delivery, 1 bay for garbage compactor/container • Includes central photocopying facilities and excludes offset or special printing/binding requirements **Total:**	**473**	1. Regional Linen Services 2. Nutrition & Food Services 3. Pharmacy
D3 **Ambulance Station**	• Includes 5 ambulance bays and 3 bedrooms as per MOH guidelines **Total:**	**(460)**	1. Main Street Access

- E1 Engineering and Maintenance Services
- E2 Housekeeping Services
- E3 Regional Linen Services
- E4 Central Staff Facilities

E Industrial/Shop Facilities (Non-Post Disaster)

Component	Scope Description	Estimated Space Need CGSM	Location Priorities
E1 Engineering & Maintenance Services	• Support a future building gross area of 26,500 BGSM • Shop/work areas including carpentry, painting, electrical, plumbing, maintenance engineering, lathe/ machinist area, HVAC area • Support area including CADD files, catalogue room • Grounds maintenance storage and shop **Total:**	**200**	1. Materiel Management (Receiving) 2. Main Service Corridor and Goods Elevator 3. Energy Centre (Power Plant)
E2 Housekeeping Services	• Future capacity of 60 on-site acute beds, 100 multilevel care clients, 60 assisted-living units • Future building area of 26,500 BGSM • Bulk storage of equipment, carts and supplies • Excludes satellite Housekeeping rooms located throughout facility **Total:**	**76**	1. Main Service Corridor 2. Material Management 3. Centre Staff Facilities
E3 Regional Linen Services	• On-site regional laundry to support the Health Campus facilities and facilities in 3 adjoining community health councils and generating approximately 1,134,000 KGs of laundry annually • On-site linen service to receive, hold and partially assemble exchange carts for distribution and hold soiled linen for return • Access to a dedicated loading bay **Total:**	**1 000**	1. Material Management 2. Main Service Corridor
E4 Central Staff Facilities	• Includes locker areas, shower facilities, uniform distribution for up to 400 FTE staff of whom about 175 are involved in direct patient care, 50 FTE in clinical support, 90 in general support, which may be partially decentralized in future **Total:**	**425**	1. Outpatient Services 2. Acute Care Services 3. Multilevel Care Facility

INTRODUCTION

A pre-schematic design estimate has been completed to provide a realistic assessment of the direct and indirect construction cost of the New Nelson Health Campus and its constituent parts.

Estimated costs are based on the space requirements identified in the Master Program, dated February 5, 2001, prepared by The RPG Partnership. Previous design concepts and site information provided by Ray Goldsworthy Architect Ltd. also assisted in determining the costs.

The Total Project Cost Estimate was determined using the 1553 Project Cost Estimate form based on the construction costs estimates prepared by Spiegel Skillen and Associates Limited.

A phased construction approach is necessitated by the limitations of the site area and the requirement to maintain the existing Mount St. Francis Hospital operational until the Multilevel Care, Assisted-Living Housing units and the Food Services component are complete. Once these facilities and demolition of the Hospital are complete, construction of the Acute Care and Community Based Services facilities can commence. This site limitation should be reviewed during the schematic phase of the project's development.

The estimate is based on a stipulated sum procurement method for all buildings. The estimate does not represent the low bid price that will be submitted at the time of tendering. The estimate represents a fair and reasonable value (average) based on the program information and previous completed Health projects within British Columbia.

Appropriate unit rates for each component have been used in conjunction with the planned program areas to arrive at an estimated cost for the overall construction.

AREAS

The present proposal to complete the Master Program Requirements for the Nelson Health Campus is to construct owned and leased facilities on the existing site of Mount St. Francis Hospital.

Owned Facilities

Acute Care And Community Based Services	17 036 m2
Multilevel Care and Adult Day Centre (including Nutrition & Food Services and Materiel Management)	7 329 m2
Total Owned Facilities	**24 365 m2**

Leased Facilities (cost estimates are not included in this report)

Assisted Living Housing Units	4 800 m2
Child Day Care, Commercial/Retail, Professional Office and Ambulance Station	4 321 m2
Total Leased Facilities	**9 121 m2**

ESCALATION AND PRICING

The estimate has been priced at current rates taking into account the size and nature of the project. The unit rates utilized are considered competitive for a project of this type bid under a stipulated lump sum form of tender in an open market with a minimum of five (5) bids and constructed within a normal timeframe.

The escalation allowance is based on a two and a one quarter percent (2.25%) per annum rate, compounded to the midpoint of the anticipate construction schedule.

The schedule is based on the following assumptions:

Phase 1: Multilevel Care, Food Services, Materiel Management and Assisted-Living Housing Units

- Complete construction by December 2003
  - Design and Documentation 16 months
  - Construction 14 months

Phase 2: Acute Care and Community Based Services

- Complete construction by January 2006
  - Design and Documentation completed during Phase 1
  - Construction 24 months

The scheduled construction of the remaining non-owned facilities noted in the Master Program is unknown at this time and have been estimated with no escalation allowance included.

In the event that the above schedule alters, the escalation allowance should be adjusted accordingly.

SCOPE

The following items are not included in the estimate:

- Land acquisition costs
- Legal costs
- Contaminated soils removal
- Leased Facilities

Taxes

The estimate includes the Provincial Sales Tax (PST) where applicable. The Federal Goods and Services Tax (GST) is included as the Payable amount for Health Care projects.

CONTINGENCIES

A design contingency of 10% has been included in the construction estimate to cover program modifications, unknown or unique design requirements due to complexity of the building and site conditions.

A construction contingency of 3% has been included in the estimate to cover change orders during construction.

PROJECT COST SUMMARY

Attached are two 1553 forms summarizing the project costs for each of the following phases of construction: (The costs are escalated.)

Phase 1

Multilevel Care Facility, Adult Day Centre Nutrition, Food Services and Material Management

Total Project Cost	$16,788,000

Phase 2

Acute Care and Community Based Services

Total Project Cost	$45,487,000
Total Project Cost for Phases 1 and 2	**$62,275,000**

Province of British Columbia

Ministry of Finance and Corporate Relations Capital Division

PROJECT COST ESTIMATE (1553)

1	FACILITY **Nelson Health Campus**	LOCATION **Nelson, BC**	STATUS ☑ Approval-in-principle ☐ Design Development ☐ Post-tender ☐ Facilities Program ☐ Contract Document ☐ Revision ☐ Schematic Design ☐ Pre-tender ☐ Wrap-up
2	PROJECT **Multilevel Care, Adult Day Care, Food Services & Material Management**		
3	PROJECT NUMBER 0	12/Feb/01 YR 2001 MTH March DAY 1	EST.'D COMPLETION YR 2004 MTH January DAY 31

	CATEGORY	NEW CONSTRUCTION	RENOVATIONS	REIMBURSABLES	GST	TOTAL CURRENT ESTIMATE	TREASURY BOARD APPROVAL	VARIANCE (> 0 = OVERRUN, < 0 = UNDERRUN)
4	BUILDING CONSTRUCTION	11,944,031	-	▨	836,082	12,780,113	-	12,780,113
5	SITE DEVELOPMENT	250,000	-	▨	17,500	267,500	-	267,500
6	SUPPLEMENTARY BUILDING COSTS	100,000	-	▨	7,000	107,000	-	107,000
7	SUPPLEMENTARY SITE COSTS	50,000	-	▨	3,500	53,500	-	53,500
8	CONSTRUCTION CONTINGENCY	370,321	-	▨	25,922	396,243	-	396,243
9	ARCHITECT (FEES)	621,090	-	50,000	46,976	718,066	-	718,066
10	STRUCTURAL ENGINEER (FEES)	143,328	-	15,000	11,083	169,411	-	169,411
11	MECHANICAL ENGINEER (FEES)	223,951	-	20,000	17,077	261,027	-	261,027
12	ELECTRICAL ENGINEER (FEES)	152,286	-	20,000	12,060	184,346	-	184,346
13	QUANTITY SURVEYOR/VA (FEES)	59,720	-	5,000	4,530	69,251	-	69,251
14	DIETARY CONSULTANT (FEES)	-	-	-	-	-	-	-
15	LANDSCAPE ARCHITECT (FEES)	12,000	-	3,500	1,085	16,585	-	16,585
16	INTERIOR DESIGNER (FEES)	10,000	-	3,000	910	13,910	-	13,910
17	FOOD SERVICES CONSULTANT (FEES)	10,000	-	3,000	910	13,910	-	13,910
18	OTHER CONSULTANTS (FEES)	148,000	-	20,000	11,760	179,760	-	179,760
19	TESTING			40,000	2,800	42,800	-	42,800
20	VA PROCESS (FEES)			104,000	7,280	111,280	-	111,280
21	PROJECT MANAGEMENT			358,321	25,082	383,403	-	383,403
22	ADMINISTRATION COSTS			69,064	4,834	73,899	-	73,899
23	LAND / SITE COSTS			-	-	-	-	-
24	LOCAL GOVT / UTILITIES / OFF SITE			430,000	30,100	460,100	-	460,100
25	OTHER COSTS			442,000	30,940	472,940	-	472,940
26	EQUIPMENT / FURNISHINGS			913,000	63,910	976,910	-	976,910
27	GST REBATE			83% x	1,161,343	(963,915)	-	(963,915)
28	OTHER CONTRIBUTIONS			-		-	-	-
29	**TOTAL PROJECT COST**					16,788,040	-	16,788,040

OPERATING COST (first full year) = $ -

FOR MFCR USE ONLY					
FUNDING SOURCE				DISTRIBUTION	
C. O. A.	AMOUNT	SH	N/SH	FAC/HA	☐
				SCH	☐
				RHD	☐
				PM	☐
				ADMIN	☐

CERTIFIED CORRECT:

FACILITY / HA / SD SIGNING AUTHORITY DATE

APPROVED:

PROJECT MANAGER DATE

MANAGER, PROJECT DELIVERY DATE

Province of British Columbia

Ministry of Finance
and Corporate Relations
Capital Division

PROJECT COST
ESTIMATE
(1553)

1	FACILITY **Nelson Health Campus**	LOCATION **Nelson, BC**	STATUS ☑ Approval in principle ☐ Facilities Program ☐ Schematic Design ☐ Design Development ☐ Contract Document ☐ Pre-tender ☐ Post-tender ☐ Revision ☐ Wrap-up		
2	PROJECT **New Health Campus - Acute Care and Community-Based Services**				
3	PROJECT NUMBER 0	12/Feb/01 YR 2001 MTH March DAY 1	EST.'D COMPLETION	YR 2006 MTH March	DAY 31

	CATEGORY	NEW CONSTRUCTION	RENOVATIONS	REIMBURSABLES	GST	TOTAL CURRENT ESTIMATE	TREASURY BOARD APPROVAL	VARIANCE (> 0 = OVERRUN, < 0 = UNDERRUN)
4	BUILDING CONSTRUCTION	32,560,000	-		2,279,200	34,839,200	-	34,839,200
5	SITE DEVELOPMENT	500,000	-		35,000	535,000	-	535,000
6	SUPPLEMENTARY BUILDING COSTS	150,000	-		10,500	160,500	-	160,500
7	SUPPLEMENTARY SITE COSTS	200,000	-		14,000	214,000	-	214,000
8	CONSTRUCTION CONTINGENCY	1,002,300	-		70,161	1,072,461	-	1,072,461
9	ARCHITECT (FEES)	1,653,000	-	150,000	126,210	1,929,210	-	1,929,210
10	STRUCTURAL ENGINEER (FEES)	382,000	-	35,000	29,190	446,190	-	446,190
11	MECHANICAL ENGINEER (FEES)	597,000	-	50,000	45,290	692,290	-	692,290
12	ELECTRICAL ENGINEER (FEES)	405,000	-	35,000	30,800	470,800	-	470,800
13	QUANTITY SURVEYOR/VA (FEES)	159,000	-	10,000	11,830	180,830	-	180,830
14	DIETARY CONSULTANT (FEES)	-	-	-	-	-	-	-
15	LANDSCAPE ARCHITECT (FEES)	35,000	-	5,000	2,800	42,800	-	42,800
16	INTERIOR DESIGNER (FEES)	25,000	-	5,000	2,100	32,100	-	32,100
17	FOOD SERVICES CONSULTANT (FEES)	75,000	-	5,000	5,600	85,600	-	85,600
18	OTHER CONSULTANTS (FEES)	410,000	-	75,000	33,950	518,950	-	518,950
19	TESTING			95,000	6,650	101,650	-	101,650
20	VA PROCESS (FEES)			140,000	9,800	149,800	-	149,800
21	PROJECT MANAGEMENT			960,000	67,200	1,027,200	-	1,027,200
22	ADMINISTRATION COSTS			243,985	17,079	261,064	-	261,064
23	LAND / SITE COSTS			-	-	-	-	-
24	LOCAL GOVT / UTILITIES / OFF SITE			795,000	55,650	850,650	-	850,650
25	OTHER COSTS			1,270,000	88,900	1,358,900	-	1,358,900
26	EQUIPMENT / FURNISHINGS			2,925,000	204,750	3,129,750	-	3,129,750
27	GST REBATE			83% x	3,146,660	(2,611,728)	-	(2,611,728)
	OTHER CONTRIBUTIONS			-		-	-	-
	TOTAL PROJECT COST					**45,487,217**	-	**45,487,217**

OPERATING COST (first full year) = $ -

CERTIFIED CORRECT:

14,264,700

FACILITY / HA / SD SIGNING AUTHORITY DATE

APPROVED:

PROJECT MANAGER DATE

MANAGER, PROJECT DELIVERY DATE

FOR MFCR USE ONLY					
FUNDING SOURCE				DISTRIBUTION	
C.O.A.	AMOUNT	SH	NSH	FAC/HA	☐
				MOH	☐
				RHD	☐
				PM	☐
				ADMIN	☐

APPENDIX A – DEFINITION OF TERMS

GENERAL

ADOLESCENT CARE - Care for persons aged 13 to 19 years.

ADULT CARE - Care for persons aged 20 years and over.

AMBULATORY CARE - Health care services provided by medical and/or other health care professionals to patients outside of the patients' home. While this term usually applies to outpatient services, it often includes services provided jointly to ambulant inpatients and outpatients.

APPLIED BASIC RESEARCH - Research for testing basic science theory/knowledge as it may apply to medical diagnosis, treatment or prevention. This form of research will typically make use of animals or animal tissues/cells and sometimes may use human tissues/cells.

BUILDING GROSS AREA or BUILDING GROSS SQUARE METRES (BGSM) - The sum of all building floor areas measured to the outside face of exterior walls for all stories or areas having floor surfaces. Building gross area includes component gross areas, general circulation, mechanical and electrical space and exterior walls.

BGSM – Building Gross Square Metres.

CGSM – Component Gross Square Metres.

CHEMOTHERAPY – The treatment of disease by chemical agents taken orally or intravenously.

CHILD CARE – Care for persons younger than the age of 12 years.

CLINICAL RESEARCH - Research for the purpose of testing new concepts in health care or monitoring/evaluating health care processes. This form of research will typically involve direct contact with patients or specimens, or information thereof. This type of research may include:

- epidemiological information gathering and analysis
- development of new techniques in prevention, diagnosis, and treatment
- evaluation of treatment programs

COMMUNITY HEALTH COUNCILS - A governance body of a specific geographical area responsible for the delivery of a range of health care services. The province is currently divided into 11 regional health boards, 94 local health areas (LHA's) with NAHC consisting of LHA 6 Kootenay Lake and LHA 7 Nelson; 34 Community Health Councils (CHC's) of which Nelson and Area is one; 7 Community Health Services Societies (CHSS's) of which the Kootenay Boundary is one; and 59 Regional Districts with NACH falling into RD 3 Central Kootenay.

COMPONENT or FUNCTIONAL COMPONENT - A cohesive grouping of activities or spaces related by service or physical arrangement. A planning component may or may not be a department since the term "department" refers to an administrative organization rather than a functional organization of space and activities.

COMPONENT/DEPARTMENTAL GROSS AREA or COMPONENT/DEPARTMENTAL GROSS SQUARE METRES (CGSM/DGSM) - That portion of a building assigned to a specific component, including net areas, internal circulation, partitions, building structure and small mechanical shafts. Component gross area is measured to the inside face of exterior walls and to the centre line of partitions adjoining other components or general circulation space.

CONVENIENT ACCESS - Physical access between rooms or components through the use of extended horizontal and/or vertical general circulation.

DEDICATED CIRCULATION - Circulation for specified people or material which may or may not require a control point.

DIRECT ACCESS - Physical access between rooms or components through the use of a minimal amount of horizontal and/or vertical general or internal circulation.

FTE/FULL TIME EQUIVALENT - A term used to express the conversion of a number of annual paid hours into the number of individuals who, if they were working a complete shift on a regularly scheduled basis, would be required to accommodate that number of hours.

GENERAL CIRCULATION - The system of connecting links (corridors, elevators, stairs, conveyors, etc.) providing access for people and materials to or between functional components.

HEADCOUNT - The translation of FTE's into the actual number of people. This includes part time and full time employees.

HOSPITAL CASES - The total number of patients discharged from hospital plus the number of deaths occurring in hospital.

INPATIENT - A patient who is admitted to a hospital for overnight care and to whom an inpatient bed has been assigned.

INPATIENT CARE - Care requiring admission to a hospital or other health care facility for a stay of at least twenty-four hours.

INTERNAL CIRCULATION - The system of connecting links (corridors, elevators, stairs, conveyors, etc.) within functional components, connecting rooms of a component or directly connecting contiguous components.

NET AREA or NET SQUARE METRES (NSM) - The horizontal area of space assignable to a specific function. The net area of rooms is measured to the inside face of wall surfaces.

RESTRICTED CIRCULATION - Internal circulation which can be entered only by passing a control point.

CLASSIFICATION OF ACUTE CARE LEVELS

PRIMARY CARE - Preventive, diagnostic and therapeutic health care provided by general practitioners and other health care professionals. This care can be sought directly by the patient, without referral, and is usually initiated through visits to private offices or clinics outside a hospital (except in the case of visits to hospital Emergency services).

SECONDARY CARE - Preventive, diagnostic and therapeutic health care provided by generalists and specialists within the medical disciplines of Medicine, Surgery, Obstetrics, Pediatrics, Psychiatry, and Physical Medicine and by other professionals. This care is often provided after referral from a source of primary care. The patient need not be ill (e.g., eye examinations) nor need he/she be a hospital patient, however, most services provided in hospitals are at the secondary care level.

TERTIARY CARE - Highly specialized medicine incorporating sophisticated and/or unique professional/technical skills and equipment or medical services that are centralized by reason of volume, limited professional resources, or extraordinary cost of services and is only available by referral.

QUATERNARY CARE - One of a kind, superspecialty-based service that may be either diagnostic or therapeutic in its role. These services are usually limited to one to a province and may accept inter-provincial, national, and international referrals.

CLASSIFICATION OF CONTINUING CARE LEVELS

PERSONAL CARE (PC) - This is the type of care required by persons who are independently mobile with or without mechanical aids, and whose primary need is for minimal non-professional supervision and/or assistance with the activities of daily living for the purpose of achieving or maintaining maximum personal independence in everyday activities.

These services are available through Long Term Care to persons still at home aged 19 or older, but can occasionally, on an individual basis, be extended to a person under 19 years of age.

INTERMEDIATE CARE (IC) - The three intermediate care levels build on the personal care level and recognize a need for care planning and supervision under the direction of a health care professional by introducing a combination of professional and non-professional (lay) supervision. This professional supervision is required on a daily rather than a 24 hour basis. Individuals at the intermediate care levels are independently mobile, with or without mechanical aids.

Intermediate Care I

This level of care recognizes the individual who requires moderate assistance with the activities of daily living and minimal professional care and/or supervision.

Intermediate Care II

This level of care recognizes the individual who has more complex care needs and who requires additional professional care and/or supervision.

Intermediate Care III

This level of care primarily recognizes the individual who exhibits severe behaviour disturbances on a continuing basis and who presents a significant management problem.

This level also recognizes the cognitively alert individual who has very heavy care requirements due to physical disabilities which require significant staff time to manage.

In both instances, the individual at this level of care requires considerable supervision and/or assistance under the direction of a health care professional.

EXTENDED CARE (EC) - This is the type of care required by persons of any age who are not in need of acute or rehabilitation treatment, but who have sever functional disability and are usually not independently mobile and/or have a chronic medical problem requiring daily supervision or treatment by a registered nurse. They require continuing medical supervision and 24 hour services of other qualified professional health personnel.

APPENDIX B – NAHC HISTORICAL SERVICES DATA

KOOTENAY LAKE REGIONAL HOSPITAL

The following table presents historical service workloads of the Kootenay Lake Regional Hospital of the Nelson and Area Health Council.

Service/Unit of Measurement	95/96	96/97	97/98	98/99	99/00
INPATIENT CARE – BY LOCATION					
Note: Patients summarized by location reflects physical bed use and not patient service due to bed assignment practices.					
Medical (incl. Peds)					
# Admissions	N/A	N/A	1,826	1,780	1,724
# Patient-Days	9,776	8,800	8,964	9,303	9,237
ALOS (Days)			4.55	4.85	4.97
% Occupancy	76.7	87.1	87.6	90.9	90.4
Beds Set-Up	26	26	26	26	26
Surgical (incl. Gynecology)					
# Admissions			629	668	674
# Patient-Days	3,552 [1]	2,274	2,179	2,552	2,527
ALOS (Days)			3.47	3.82	3.75
% Occupancy	121.2	77.9	74.8	87.4	86.5
Beds Set-Up	14	8	8	8	8
Obstetrical					
# Admissions			458	455	478
# Patient-Days	179 [1]	1,583	1,452	1492	1516
ALOS (Days)			3.14	3.28	3.17
% Occupancy	6.3	72.3	65.6	68.2	69.2
Beds Set-Up	*Incl. in Surgery*		6	6	6
Nursery (Newborns)					
# Admissions	N/A	N/A	239	236	253
# Patient-Days	895	850	748	618	635
ALOS (Days)					
% Occupancy					
Bassinets Set-Up	8	8	8	8	8
Pediatric					
# Admissions			*Incl. in Med*	*Incl. in Med*	*Incl. in Med*
# Patient-Days	*Incl. in Med*	*Incl. in Med*	*Incl. in Med*	*Incl. in Med*	*Incl. in Med*
ALOS (Days)			*Incl. in Med*	*Incl. in Med*	*Incl. in Med*
% Occupancy	41.3	35.9	38.4	41.6	– [2]
Beds Set-Up	2	2	2	2	2
Intensive Care/Coronary Care					
# Admissions			156	139	146
# Patient-Days	902	906	832	822	819
ALOS (Days)			5.33	5.92	5.61
% Occupancy	63.5	82.7	76.0	75.1	74.8
Beds Set-Up	3		3	3	3

KOOTENAY LAKE REGIONAL HOSPITAL (cont'd)

Service/Unit of Measurement	95/96	96/97	97/98	98/99	99/00
INPATIENT CARE – BY LOCATION (cont'd)					
Psychiatric					
# Admissions		*Service not available at KLRH*			
# Patient-Days		*Service not available at KLRH*			
ALOS (Days)		*Service not available at KLRH*			
% Occupancy		*Service not available at KLRH*			
Beds Set-Up		*Service not available at KLRH*			
Alternate Level Care (ALC)					
# Admissions					
# Patient-Days					
ALOS (Days)					
% Occupancy					
Beds Set-Up					
# Total Admissions (incl. newborn)	3,405	3,369	3,308	3,278	3,275
# Admissions Through Emergency as % of Total Admissions	57%	60%	56.6%	57.8%	50.3%
# Total Patient-Days (incl. newborns)	15,304	14,413	14,175	14,787	14,734
ALOS Adults/Children	4.5	4.3	4.07	4.33	4.29
ALOS Newborns	3.0	3.5		2.5	
% Occupancy (Adults/Children)	72.0	82.6	81.9%	86.4%	85.6%
Total Beds Set Up					
# Adult & Children	45	45	45	45	45
# Newborn (Bassinets)	8	8	8	8	8

INPATIENT CARE – BY PATIENT SERVICE

Note: Patient services is assigned on the basis of most responsible diagnosis and is based on discharge information.

Medical (incl. Psych)					
# Discharges	1,705	1,775	1,718	1,767	1,654
# Discharge-Days	9,368	8,906	8,869	9,252	8,604
ALOS (Days)	5.5	5.0	5.2	5.2	5.2
% Occupancy [1]					
Beds Set-Up	26	26	26	26	26
Surgical (incl. Gynecology)					
# Discharges	789	764	798	745	819
# Discharge-Days	3,189	2,959	3,105	2,762	3,260
ALOS (Days)	3.1	3.3	3.9	3.7	4.0
% Occupancy [1]					
Beds Set-Up	14	8	8	8	8
Obstetrical					
# Discharges	428	406	375	347	354
# Discharge-Days	1,314	1,360	1,118	979	941
ALOS (Days)	3.1	3.3	2.9	2.8	2.6
% Occupancy [1]					
Beds Set-Up	*Incl. in Surgery*		6	6	6

KOOTENAY LAKE REGIONAL HOSPITAL (cont'd)

Service/Unit of Measurement	95/96	96/97	97/98	98/99	99/00
INPATIENT CARE – BY PATIENT SERVICE (cont'd)					
Nursery (Newborns)					
# Discharges	297	266	240	239	250
# Discharge-Days	886	862	709	608	619
ALOS (Days)	3.0	3.2	3.0	2.5	2.5
% Occupancy [1]					
Bassinets Set-Up			8	8	8
Pediatric					
# Discharges	179	162	170	132	129
# Discharge-Days	393	329	333	273	231
ALOS (Days)	2.2	2.0	2.0	2.1	1.8
% Occupancy [1]					
Beds Set-Up	2		2	2	2
Intensive Care/Coronary Care					
# Discharges			156	139	146
# Discharge-Days			832	822	819
ALOS (Days)			5.33	5.92	5.61
% Occupancy [1]			76.0	75.1	74.8
Beds Set-Up	3		3	3	3
Psychiatric					
# Discharges		*Service not available at KLRH*			
# Discharge-Days		*Service not available at KLRH*			
ALOS (Days)		*Service not available at KLRH*			
% Occupancy [1]		*Service not available at KLRH*			
Beds Set-Up		*Service not available at KLRH*			
Alternate Level Care (ALC)					
# Discharges	8	3	9	52	52
# Discharge-Days	100	36	72	893	1,180
ALOS (Days)	12.5	12.0	8.0	17.2	22.7
% Occupancy [1]					
Beds Set-Up					
# Total Discharges (incl. newborn)	3,406	3,376	3,310	3,282	3,263
# Total Discharge-Days (incl. newborns)	15,250	14,452	14,206	14,767	14,835
# Total Discharge-Days (excl. newborns)	14,364	13,590	13,497	14,159	14,216
ALOS Adults/Children	4.6	4.4	4.4	4.7	4.7
ALOS Newborns	3.0	3.2	3.0	2.5	2.5
% Occupancy (Adults/Children) [1]					
Total Beds Set Up					
# Adult & Children	45	45	45	45	45
# Newborn (Bassinets)	8	8	8	8	8
# Live Births					
> 2,500 Grams	276	253	229	234	239
< 2,500 Grams	15	13	11	5	11
Total	291	266	240	239	250

KOOTENAY LAKE REGIONAL HOSPITAL (cont'd)

Service/Unit of Measurement	95/96	96/97	97/98	98/99	99/00
OUTPATIENT CARE					
Emergency Visits					
# IP Scheduled			91	61	44
# IP Non-Scheduled			45	114	78
# OP Scheduled			14,364	12,314	11,481
# OP Non-Scheduled			3,385	4,205	3,405
# Total Visits	18,469	17,558	17,885	16,694	15,008
# Admitted Thru ER			1,875	1,895	1,648
Chemotherapy					
# Treatments	373	349	544	579	809
Pre-Admission Clinic					
# Visits	1,455 [3]	1,554	1,637	1,295	1,563
Diabetic Education					
# Visits	308	295	699 *	673 *	406
# Patients					
OBS Non-Stress Tests	105	119	110	123	172
Nutrition Counselling					
# IP Visits	1,077	668	28,590	54,550 *	28,170
# OP Visits	1,385	691	48,660	38,472 *	63,365
# Referred In Visits	*Not reported*	*Not reported*	3,105	4,140 *	2,640
Total Visits			80,355	97,162 *	94,175
Psychiatric Day Program					
# Visits	3,688	4,136	–[4]	–[4]	–[4]
# Patients					
Ostomy Counselling					
# IP Visits		*Incl. in Pat. Ed.*	3,885	4,600	2,445
# OP Visits			2,935	2,171	1,635
Total			6,820	6,771	4,080
G.I. Endoscopies (Upper & Lower)					
# IP Procedures	188	198	181	175	178
# Day Care Procedures	558	527	600	645	732
Total	746	725	781	820	910
Cystoscopy					
# IP Procedures	11	16	14	3	5
# Day Care Procedures	132	117	118	134	133
Total	143	133	132	137	138
Bronchoscopy					
# IP Procedures	4	6	1	4	11
# OP Procedures	3	0	0	8	28
Total	7	6	1	12	39

KOOTENAY LAKE REGIONAL HOSPITAL (cont'd)

Service/Unit of Measurement	95/96	96/97	97/98	98/99	99/00
OUTPATIENT CARE (cont'd)					
ERCP					
IP Procedures			1	21	25
OP Procedures			1	12	23
Total	0	0	2	33	48
CLINICAL SUPPORT SERVICES					
Surgical Services					
# IP Beds [5]	8	8	8	8	8
# IP Cases	830	839	868	819	908
# IP PAR Visits	794	793	801	726	777
# Day Care Beds	12	12	12	12	12
# Day Cases	1,627	1,700	1,739	1,749	2,097
# Day Care PAR Visits	1,561	1,646	1,662	1,467	1,747
# Total Surgical Cases	2,457	2,539	2,607	2,568	3,005
# Total PAR Visits	2,355	2,439	2,463	2,193	2,524
% Same Day Admits Total Cases	61%	66%	69%	72%	72%
Deliveries					
# C-Section	41	41	39	40	35
# Vaginal	252	222	201	199	210
Total	293	263	240	239	245
Patient/Family Counselling (SW)					
IP Contacts					
OP Contacts					
Total Patient Contacts	est 425	est 454	452	461	462
Diagnostic Imaging					
General Radiology [6]					
IP Exams	2,922	2,602	858	2,749	2552
OP Exams	8,514	9,005	11,311	8,991	9632
Total	11,436	11,607	12,169	11,740	12184
Ultrasound Exams					
IP Exams	585	593	326	606	579
OP Exams	2,788	2,966	3,337	3,302	3513
Total	3,373	3,559	3,663	3,908	4092
Peripheral arterial ultrasounds November '99					6

Diagnostic Mammography Exams[7] *Included in General X-ray Exam totals*
Screening Mammography Exams
Echocardiography *Service not provided until 1995/96 fiscal year – included in Ultrasound Exam totals*

KOOTENAY LAKE REGIONAL HOSPITAL (cont'd)

Service/Unit of Measurement	95/96	96/97	97/98	98/99	99/00
CLINICAL SUPPORT SERVICES (cont'd)					
Laboratory (000)				8078 Callibration Standard Units	
# IP/ER Units	324,998	292,300	377,130	412,129	382,534
# OP Units	465,833	439,714	365,345	367,745	405,706
# Referred In Units	299,495	309,340	278,111	284,735	374,257
# QC Units	215,199	211,367	211,489	207,552	234,861
Total	1,305,525	1,252,721	1,232,075	1,272,161	1,405,435
# Autopsies Yearly	1995 45	1996 62	1997 58	1998 49	1999 56
ECG Cardiac Diagnostic					
# IP Tests	NA	NA	2232	2775	2663
# OP Tests	NA	NA	1357	1154	1324
Total			3589	3929	3984
Stress Testing					
Visits	427	421			
Units			28,425	37,010 *	40,215
Holter Monitoring					
Visits	168	174			
Units			2,535	2,920 *	4,364
Pulmonary Function					
Visits	252	219			
Units			4,530	841 *	?
Event Monitoring					
Visits	65	39			
Units			NA	450 *	1,765
Respiratory Care					
IP Attendances			95	155	211
OP Attendances	252	219	223	564 *	743
Total	252	219	318	719	954
Rehabilitation Services					
Physiotherapy [7]					
IP Attendances	2,428	2,253	2,702	3,221	2820
OP Attendances	5,985	5,240	5,545	5,300	5061
Outreach Attendances	*Incorporated into totals*		322	434	397
Total	8,413	7,493	8,569	8,955	8278
Occupational Therapy					
IP Attendances	453	457	241	402	543
OP Attendances	779	654	584	580	565
Outreach	*Incorporated into totals*		350	348	306
Total	1,232	1,111	1,175	1,330	1468

KOOTENAY LAKE REGIONAL HOSPITAL (cont'd)

Service/Unit of Measurement	95/96	96/97	97/98	98/99	99/00
CLINICAL SUPPORT SERVICES (cont'd)					
Pharmacy[9]					
# IP Prescription/Doses		24,862	26,369	26,424	37,024
# OP Prescription/Doses	*Not tracked to date*				
TPN Mixtures		225	380	302	311
IV Preps				1,195	1,842
GENERAL SUPPORT SERVICES					
Nutrition & Food Services					
# IP Meal Days	13,870	14,600	14,655	14,750	15,000
# OP Meal Days	626	686	694	705	867
# Non-Pt Meal Days	6,025	5,855	5,740	5,655	5,705
# ECU Meal Days	--	–	–	–	–
# Meal Days to Other	N/A	N/A	N/A	N/A	N/A
Total	20,521	21,141	21,089	21,110	21,572
Laundry					
# KG all sites	340,820	339,841	347,388	338,283	646,584
# KG from KLRH	136,316	134,984	136,313	133,126	137,811

(KLRH Linen is included in all sites yearly totals at end of this report)

Notes:

1 Occupancy based on patient-days. Please refer to table beginning on page B1.
2 Not Available-included in Medical occupancy rate
3 PAC visits annualized from 7 reporting periods data (Sep 95 – Mar 96).
4 Program moved to KBCHSS in April 1998.
5 The surgical bed complement decreased from 17 to 8 over a 10-year period (53%); however, the number of inpatient surgical procedures decreased only by 8.2%.
6 General x-ray volumes have decreased over the years due to ultrasound and other specialized exams.
7 Mammography exam numbers have decreased dramatically in the past few years due to changes in Ministry of Health guidelines pertaining to testing frequency and initiation of the Screening Mammography Van.
8 One FT Physiotherapy position was deleted through attrition in 1994/95.
Increased inpatient pressure and implementation of the Cardiac Program has resulted in fewer outpatients being treated. The outpatient physiotherapy therapy waitlist increased from 32 patients in 1996/97 to 86 patients in 1999/00.
9 #OP presciprtions not tracked to date
Large jump in IP prescription numbers seen from 98/99 to 99/00 partially due to provision of services to Boundary Hospital and Sunshine Manor by Pharmacy Services
Large jump in IV prep doses is due to increasing volumes throughout the chemotherapy department

- *Method of reporting changed from visits to units.*

THE VICTORIAN HOSPITAL OF KASLO

The following table presents historical service workloads of The Victorian Hospital of Kaslo of the Nelson and Area Health Council.

Service/Unit of Measurement	95/96	96/97	97/98	98/99	99/00
INPATIENT CARE					
Medical/Surgical					
# Admissions	99	113	148	66	47
# Patient-Days	742	898	1,281	1,482	1,751
ALOS (Days)	7.5	7.9	8.6	9.8	34.5
% Occupancy	50.7	49.5	50.3	81.2	95.9
Beds Set-Up	5	5	5	5	5
Total Discharges				68	48
Total Discharge Days				668	1,657
OUTPATIENT CARE					
Emergency Visits					
# Emergent					
# Urgent					
# Non-Urgent					
# Total Visits	1,508	2,090	2,007	1,558	1,450
# Admitted				22	5
Outpatient Clinic Visits	N/A				
# Visits					
Minor Surgery					
# Cases	70				
CLINICAL SUPPORT SERVICES					
Diagnostic Imaging					
General Xray Exams	856	837	867	714	656
Laboratory (000)					
Inpatient/Outpatient Units	4,621	5,328	7,340	6671	6,508
ECG/Holter Monitoring Units	5,250			5,580	5,670
Physiotherapy Attendances	563	838	809	1,883	1,331
Pharmacy *Included in KLRH Totals*					
# IP Prescription/Doses					
# OP Prescription/Doses					
TPN Mixtures					
IV Preps					

THE VICTORIAN HOSPITAL OF KASLO (cont'd)

Service/Unit of Measurement	95/96	96/97	97/98	98/99	99/00
SUPPORT SERVICES					
Nutrition & Food Services					
# IP Meal Days	1,825	1,830	3,550	3,650	3,675
# OP Meal Days	–	–	–	–	–
# ECU Meal Days	–	–	–	–	–
# Non-Pt Meal Days	NA	NA	NA	NA	NA
# Meal Days to Other (Meals on Wheels)	585	590	600	625	520*
			**decrease due to frozen meals*		
Total	2,410	2,420	5,950	6,095	6,020
Laundry *(all done at the KLRH Laundry)*					
# KG	4,867	5,742	6,015	7,340	8,395

Notes:
1

APPENDIX C – EXISTING KLRH STAFF PROFILE

2000/01 Budget FTE's	KOOTENAY LAKE REGIONAL HOSPITAL SITE
	Inpatient Care Services
48.97	Medical/Surgical/Maternity Inpatient Units/Daycare Surgery, Pre-Admission Clinic
0.47	Early Maternity Discharge
9.87	Intensive/Coronary Care Unit
59.31	Subtotal
	Clinical Support Services
6.42	Surgical Suite (including PAR)
1.71	Central Sterile Supply
7.90	Diagnostic Imaging
20.11	Laboratory Services (incl. Morgue & Autopsy) Diagnostic Services
5.17	Rehabilitation Services (PT & OT)
0.60	Social Work
5.22	Pharmacy Services
47.13	Subtotal
	Ambulatory Care Services/Community Programs
8.93	Emergency
0.46	Chemotherapy
0.64	Stress Testing
1.87	Diabetic Day Care
11.90	Subtotal
	Public and Administrative Services
5.10	Administration
12.75	Finance
6.33	Admitting/Ward Clerks
8.87	Health Records
3.00	Information Systems
36.05	Subtotal
	General Support Services
4.97	Materiel Management
9.70	Nutrition and Food Services (including Clinical Nutrition)
13.47	Housekeeping Services
12.10	Regional Linen Services
8.25	Engineering/Maintenance
48.49	Subtotal
202.88[1]	**TOTAL**

Note:

[1] *Figures include relief coverage for vacation, sick leave and special leave.*

APPENDIX D –MEDICAL STAFF PROFILES

The following table presents the NAHC Physician Resources as of 31 October 2000.

Department/Division	KLRH	VHK	Other	Total	Future Additions
Anaesthesia	1				
Emergency Medicine	0				
Family Medicine/General Practice	20	1	6		
Laboratory Medicine	1				
Medicine					
Cardiology	0				
Critical Care	0				
Dermatology	0				
Endocrinology	0				
Gastroenterology	0				
Infectious Diseases	0				
Internal Medicine	1				2
Nephrology	0				
Neurology	1				
Physical Medicine & Rehabilitation	0				
Respirology	0				
Rheumatology	0				
Subtotal	2				2
Obstetrics & Gynecology	1				1
Pediatrics	1				
Psychiatry	2				
Radiology	1				
Surgery					
Cardiovascular & Thoracic	0				
Dentistry	2				
General Surgery	2.5				0.5
Neurosurgery	0				
Ophthalmology	1				
Orthopedics	0				
Otolaryngology	0				
Plastic Surgery	0				
Urology	0				
Subtotal	5.5				0.5
Other					
Midwifery	2				1
Total (Excl. Other)	**36.5**				**4.5**

Notes:

1 *Visiting specialists include Rheumatology, Otolaryngology, Pediatrics, Ophthalmology, Orthopedics, Public Health, Psychiatry, Urology, Oncology and Thoracic Surgery.*

APPENDIX E – DEMOGRAPHY

This appendix describes the demography of NAHC in comparision to 5 peer CHCs which were judged to be similar to NAHC in terms of population and projected growth rate.

Peer CHC Selection

The other CHCs of the KBCHSS region are projected to have slower growth and they are not as large as NAHC. Therefore, other CHCs in BC were chosen as peers to compare to NAHC. The criteria for selection were:

- Similar population - within 10,000 persons in 2000
- Growth of at least 15% from 2000 to 2015

The CHCs meeting the criteria were:

- Campbell River/Nootka CHC
- North Peace CHC
- Sea to Sky CHC
- Sunshine Coast CHC
- Terrace & Area CHC

BC is projected to increase 24 percent in population to 2015. The 2000 and 2015 population for each of the CHCs of interest and their projected growth rates are shown in Figure E1.

Figure E1: Population, Peer CHCs, 2000 and 2015

CHC	Population		Growth
	2000	2015	2000-15
Nelson & Area CHC	29,313	37,073	26%
Campbell River/Nootka CHC	44,663	52,670	18%
North Peace CHC	31,192	36,570	17%
Sea to Sky CHC	31,962	50,169	57%
Sunshine Coast CHC	27,838	41,636	50%
Terrace & Area CHC	24,093	27,864	16%

Peer CHCs Age Distribution

By 2015, BC is projected to have over 5 million people and NAHC is projected to have 37,000 persons.

NAHC and the peer CHCs have a similar age distribution to the Province (Figure E2).

Of its 5 peer groups, Sunshine Coast CHC has the highest proportion of elderly and Terrace & Area CHC and North Peace CHC have the lowest proportion of elderly (Figure E3).

Figure E2: Population by Age Group, Peer CHCs, 2000

CHC	Age Group					Total
	0-14	15-44	45-64	65-74	75+	
Nelson & Area CHC	5,082	12,340	8,023	2,111	1,757	29,313
Sunshine Coast CHC	5,040	10,343	7,536	2,830	2,089	27,838
Sea to Sky CHC	5,676	18,207	6,314	1,112	653	31,962
Campbell River/Nootka CHC	8,998	20,285	11,218	2,474	1,688	44,663
North Peace CHC	7,683	15,530	6,025	1,253	701	31,192
Terrace & Area CHC	6,012	11,538	4,917	1,064	562	24,093
BC	735,948	1,823,894	977,872	285,504	243,961	4,067,179

Figure E3: Age Distribution, Peer CHCs, 2000

CHC	Age Group				
	0-14	15-44	45-64	65-74	75+
Nelson & Area CHC	17%	42%	27%	7%	6%
Sunshine Coast CHC	18%	37%	27%	10%	8%
Sea to Sky CHC	18%	57%	20%	3%	2%
Campbell River/Nootka CHC	20%	45%	25%	6%	4%
North Peace CHC	25%	50%	19%	4%	2%
Terrace & Area CHC	25%	48%	20%	4%	2%
BC	**18%**	**45%**	**24%**	**7%**	**6%**

Figure E4: Population by Age Group, Peer CHCs, 2015

CHC	Age Group					Total
	0-14	15-44	45-64	65-74	75+	
Nelson & Area CHC	5,732	13,687	11,514	3,761	2,379	37,073
Sunshine Coast CHC	6,206	14,748	12,371	4,772	3,539	41,636
Sea to Sky CHC	7,270	25,496	12,890	2,736	1,777	50,169
Campbell River/Nootka CHC	8,062	20,084	16,600	5,102	2,822	52,670
North Peace CHC	7,037	15,205	10,366	2,535	1,427	36,570
Terrace & Area CHC	5,008	11,669	8,021	2,160	1,006	27,864
BC	757,576	1,980,274	1,496,795	476,010	341,907	5,052,562

The peer CHCs are projected to grow relatively quickly and as such have are relatively low percentage of the elderly and a relatively high percentage of the lower age groups as compared to BC.

Figure E5: Age Distribution, Peer CHCs, 2015

CHC	Age Group				
	0-14	15-44	45-64	65-74	75+
Nelson & Area CHC	15%	37%	31%	10%	6%
Sunshine Coast CHC	15%	35%	30%	11%	8%
Sea to Sky CHC	14%	51%	26%	5%	4%
Campbell River/Nootka CHC	15%	38%	32%	10%	5%
North Peace CHC	19%	42%	28%	7%	4%
Terrace & Area CHC	18%	42%	29%	8%	4%
BC	15%	39%	30%	9%	7%

APPENDIX F – ACUTE CARE UTILIZATION

ACUTE CARE UTILIZATION BY CHC RESIDENTS

As shown in Figure F1 below, the residents of NAHC experienced 47,468 days of care in a hospital setting in 1998-99, regardless of location. Extended care accounted for 54 percent of days in 1998-99 and acute care accounted for 42 percent of days. Rehab care accounted for 1 percent of days and ALC accounted for 2 percent of days.

Over the five years from 1994-95 to 1998-99 there was an 8 percent drop in the number of days of acute care for residents of NAHC. There was a 9 percent increase in the number of EC days of care for NAHC residents and a doubling in the number of rehab days. The number of ALC days increased by over 5000 percent. It should be noted that the use of the ALC designation was being implemented over the five years shown in this historical summary. The large increases in ALC utilization are therefore a result of implementation issues.

Figure F1: Days of Hospital Care for NAHC Residents

Source: PURRFECT 5.0
Note: The number of EC days for 95-96 of 41,875 is an outlier and is due to an error in PURRFECT 5.0

Level	Days					5 year
	94-95	95-96	96-97	97-98	98-99	change
Acute	21,746	20,439	20,734	20,302	20,063	-8%
Rehab	299	67	229	264	646	116%
ALC	19	139	179	431	997	5147%
EC	23,719	41,875	25,399	28,420	25,762	9%
All Levels	45,783	62,520	46,541	49,417	47,468	4%

Cases of hospital care for NAHC residents regardless of location of are shown below. Similar to days of care, the number of cases for acute care dropped slightly over the 5 years while the number of EC cases increased. The number of ALC cases increased by over 2000 percent. Surgical day care cases numbered 2,136 in 1998-99, which was a 9 percent increase over 1994-95.

Figure F2: Cases of Hospital Care for NAHC Residents

Source: PURRFECT 5.0,

Level	Cases					5 year
	94-95	95-96	96-97	97-98	98-99	change
Acute	4,001	3,881	3,948	3,904	3,909	-2%
Rehab	6	3	7	8	6	0%
ALC	3	10	8	28	64	2033%
EC	71	83	85	81	81	14%
SDC	1,951	2,029	2,027	2,110	2,136	9%
All Levels	6,029	5,996	6,067	6,103	6,132	2%

The average length of stay for care to NAHC residents is shown below in Figure F3. The average length of stay for acute care was 5.1 days in 1998-99, which was a 6 percent decrease from 1994-95. The average length of stay in EC was 318 days in 1998-99, a 5 percent drop over the previous 5 years.

Figure F3: Average Length of Stay of Hospital Care for NAHC Residents

Source: PURRFECT 5.0,

Level	ALOS					5 year
	94-95	95-96	96-97	97-98	98-99	change
Acute	5.4	5.3	5.3	5.2	5.1	-6%
Rehab	49.8	22.3	32.7	33.0	107.7	116%
ALC	6.3	13.9	22.4	15.4	15.6	146%
EC	334.1	504.5	298.8	350.9	318.0	-5%
All Levels	7.6	10.4	7.7	8.1	7.7	2%

LOCATION OF ACUTE CARE UTILIZATION BY NAHC RESIDENTS

The previous section summarized all care for NAHC residents regardless of location. The care received by NAHC residents in hospitals identified by the name of the hospital is shown below in Figure F4 for acute care.

In 1998-99, 59 percent of the days of acute care for residents of NAHC were delivered at Kootenay Lake District Hospital, a drop of 3 percentage points from 1994-95. Trail Regional Hospital accounted for 19 percent of the days of acute care for NAHC residents in 1998-99.

Figure F4: Percent of Days of Acute Care, NAHC Residents, by Hospital

Hospital	Percent of Days				
	94-95	95-96	96-97	97-98	98-99
Kootenay Lake District Hospital	59	58	55	55	56
Trail Regional Hospital	19	18	19	20	19
COUTH Hospitals	9	11	13	10	10
Other Hospitals	7	7	5	5	4
Kelowna General Hospital	2	3	4	4	6
Victorian Hospital	4	3	4	3	3
Castlegar & District Hospital				2	2

Rehabilitation care for residents of NAHC has been delivered entirely in the Lower Mainland or out of province.

Figure F5: Percent of Days of Rehabilitation Care, NAHC Residents, by Hospital

Hospital	Percent of Days				
	94-95	95-96	96-97	97-98	98-99
COUTH Hospitals	36		90	77	83
Out of Province	6	78			
Holy Family Hospital	58		10		15
Sunny Hill Health Centre for Children		22		23	2

Days of ALC care for residents of NAHC were delivered primarily at Kootenay Lake District Hospital in 1998-99. The percentages delivered in various locations in previous years are highly variable, likely due to the very small number of persons cared for at the ALC level.

Figure F6: Percent of Days of ALC, NAHC Residents, by Hospital

Hospital	Percent of Days				
	94-95	95-96	96-97	97-98	98-99
Kootenay Lake District Hospital	26	71	20	17	86
Castlegar & District Hospital	74			17	6
Trail Regional Hospital		30	45	4	3
Victorian Hospital				48	2
Slocan Community Hospital			30	3	
COUTH Hospitals			2	4	3
Creston Valley Hospital			4	2	
Eagle Ridge Hospital				4	
Kelowna General Hospital				0	1

Extended care for residents of NAHC is delivered primarily at Mount St. Francis Extended Care Hospital (86 percent in 1998-99).

Figure F7: Percent of Days of Extended Care, NAHC Residents, by Hospital

Hospital	Percent of Days				
	94-95	95-96	96-97	97-98	98-99
Mount St. Francis Extended Care Hosp.	94	88	89	86	86
Castlegar & District Hospital		6	5		7
Cranbrook Regional Hospital	6				4
Slocan Community Hospital				9	
Mater Misericordiae			5	3	
Creston Valley Hospital		5			
Other Hospitals		0	1	2	0
Victorian Hospital				0	3

About 60 percent of the surgical day care cases for NAHC residents is delivered at the Kootenay Lake District Hospital, 19 percent at Trail Regional Hospital and 11 percent in the Lower Mainland at the COUTH (Council of University Teaching Hospitals) facilities.

Figure F8: Percent of Case, Surgical Day Care, NAHC Residents, by Hospital

Hospital	Percent of Cases				
	94-95	95-96	96-97	97-98	98-99
Kootenay Lake District Hospital	60	59	60	59	60
Trail Regional Hospital	17	18	19	18	19
Mater Misericordiae	13	11	10	11	11
COUTH Hospitals	4	4	5	5	4
Other Hospitals	6	6	3	4	4
Kelowna General Hospital		3	3	3	3

KLRH - SOURCE OF PATIENTS

The Kootenay Lake Regional Hospital provided 13,483 days of acute care in 1998-99, an 8 percent drop since 1994-95. Residents of Nelson and Area CHC were provided with 12,088 days of acute care in 1998-99 at KLRH, a drop of 5 percent since 1994-95.

Figure F9: Days of Care at KLRH, by CHC

CHC	Historical					5 yr
	94-95	95-96	96-97	97-98	98-99	change
Nelson and Area	12,739	11,963	11,385	11,319	12,088	-5%
Arrow Lakes/Upper Slocan Valley	701	803	641	697	520	-26%
Castlegar & District	1,220	857	767	782	806	-34%
Other RHB/CHCs	761	738	797	685	742	-3%
Total	15,422	14,361	13,590	13,483	14,155	-8%

The percentage breakdown of days of care provided at KLRH by CHC of residence is shown in Figure F10 below. The percentages have been relatively stable over the 5 years of historical data shown, with NAHC accounting for about 85 percent of days of care, Arrow Lakes/Upper Slocan Valley accounting for about 5 percent and Castlegar and District accounting for about 6 percent.

Figure F10: Percent of Days of Care at KLRH, by CHC

CHC	Historical				
	94-95	95-96	96-97	97-98	98-99
Nelson and Area	83%	83%	84%	84%	85%
Arrow Lakes/Upper Slocan Valley	5%	6%	5%	5%	4%
Castlegar & District	8%	6%	6%	6%	6%
Other RHB/CHCs	5%	5%	6%	5%	5%
Total	100%	100%	100%	100%	100%

As shown in Figure F11 below, the drop in days of care shown above is mirrored in the number of cases of care provided at KLRH, though the decline in cases since 1994-95 is less than the drop in days of care. This is explained by the drop in average length of stay (ALOS) shown in Figure F12.

Figure F11: Inpatient Cases at KLRH, by CHC

CHC	Historical					5 yr
	94-95	95-96	96-97	97-98	98-99	change
Nelson and Area	2,643	2,567	2,582	2,512	2,554	-3%
Arrow Lakes/Upper Slocan Valley	163	166	146	165	136	-16%
Castlegar & District	234	192	177	192	192	-18%
Other RHB/CHCs	222	189	207	209	211	-5%
Total	3,262	3,115	3,113	3,078	3,093	-5%

The average length of stay at KLRH is about 4.6 days, a drop of 3 percent since 1994-95.

Figure F12: ALOS at KLRH, by CHC

CHC	Historical					5 yr
	94-95	95-96	96-97	97-98	98-99	change
Nelson and Area	4.8	4.7	4.4	4.5	4.7	-2%
Arrow Lakes/Upper Slocan Valley	4.3	4.8	4.4	4.2	3.8	-11%
Castlegar & District	5.2	4.5	4.3	4.1	4.2	-20%
Other RHB/CHCs	3.4	3.9	3.8	3.3	3.5	3%
Total	4.7	4.6	4.4	4.4	4.6	-3%

ACUTE CARE UTILIZATION RATES

Peer CHCs

NAHC age-adjusted hospital utilization rates for days of care compared to peer CHCs are shown below in Figure F13. The first half of the table has the actual age-adjusted utilization rates. In order to better compare the various rates to the BC average, the second part of the table expresses the rates as a percent of the BC rate.

The utilization rate for extended care days is higher than the utilization rate for acute care days for all CHCs except Terrace and Area. Utilization of ALC days and rehab days is much lower than acute or EC utilization.

NAHC has an age-adjusted utilization rate of acute days which is 19 percent higher than the provincial average, yet is still lower than North Peace CHC and Terrace & Area CHC.

ALC days utilization rate for NAHC residents is about half the provincial rate and seven times less than the highest rate for Campbell River/Nootka CHC.

Figure F13: Age Adjusted Utilization of Hospital Days, NAHC & Peers, 1998-99

DAYS

Peer CHC		Acute	ALC	EC	Rehab
Age adjusted rate					
6	Nelson & Area CHC	687	34	877	22
16	Sunshine Coast CHC	603	38	815	14
18	Sea to Sky CHC	642	44	681	12
20	Campbell River/Nootka CHC	602	245	827	18
24	North Peace CHC	741	168	1,092	9
28	Terrace & Area CHC	725	98	460	18
	British Columbia	575	66	695	14
As percent of BC rate					
6	Nelson & Area CHC	119%	51%	126%	156%
16	Sunshine Coast CHC	105%	58%	117%	100%
18	Sea to Sky CHC	112%	66%	98%	88%
20	Campbell River/Nootka CHC	105%	369%	119%	126%
24	North Peace CHC	129%	254%	157%	63%
28	Terrace & Area CHC	126%	148%	66%	130%
	British Columbia	100%	100%	100%	100%

Figure F14 below presents the age-adjusted utilization rate of hospital cases, by level of care. NAHC has an age-adjusted rate of acute care cases which is 39 percent higher than the BC average and is the highest of all the peer CHCs. The rate of ALC utilization and rehab utilization is among the lowest of the peers. The rate of extended care utilization is 52 percent higher than the BC average.

Figure F14: Age Adjusted Utilization of Hospital Cases, NAHC & Peers, 1998-99

Peer CHC		Acute	ALC	EC	Rehab	SDC
Age adjusted rate						
C06	Nelson & Area CHC	136.0	2.2	2.7	0.2	72.5
C16	Sunshine Coast CHC	107.1	2.0	1.5	0.4	52.9
C18	Sea to Sky CHC	115.2	2.5	1.8	0.4	55.2
C20	Campbell River/Nootka CHC	109.9	3.6	1.4	0.5	72.0
C24	North Peace CHC	126.2	3.1	1.8	0.2	55.0
C28	Terrace & Area CHC	120.2	2.2	1.6	0.4	71.5
	British Columbia	97.5	2.6	1.8	0.3	60.7
As percent of BC rate						
6	Nelson & Area CHC	139%	84%	152%	66%	119%
16	Sunshine Coast CHC	110%	77%	83%	139%	87%
18	Sea to Sky CHC	118%	98%	100%	133%	91%
20	Campbell River/Nootka CHC	113%	139%	77%	148%	119%
24	North Peace CHC	129%	118%	102%	80%	91%
28	Terrace & Area CHC	123%	85%	86%	118%	118%
	British Columbia	100%	100%	100%	100%	100%

West Kootenay Boundary Health Region CHCs 1988-99

NAHC age-adjusted hospital utilization rates for days of care compared to West Kootenay Boundary Health Region (WKBHR) CHCs are shown below in Figure F15. The first half of the table has the actual age-adjusted utilization rates. In order to better compare the various rates to the BC average, the second part of the table expresses the rates as a percent of the BC rate.

Arrow Lakes/Upper Slocan Valley CHC stands out as having relatively high rates of acute care and ALC utilization and a low rate of extended care utilization.

Boundary CHC has relatively low rates of acute care, ALC, extended care and rehab care.

Figure F15: Age Adjusted Utilization of Hospital Days, WKBHR CHCs, 1998-99

Peer CHC		Acute	ALC	EC	Rehab
Age adjusted rate					
6	Nelson & Area CHC	687	34	877	22
7	Castlegar & District CHC	691	19	519	11
8	Arrow Lakes/Upper Slocan Valley CHC	1,011	105	463	0
9	Greater Trail CHC	684	42	726	2
10	Boundary CHC	616	54	664	0
	British Columbia	575	66	695	14
As percent of BC rate					
6	Nelson & Area CHC	119%	51%	126%	156%
7	Castlegar & District CHC	120%	29%	75%	76%
8	Arrow Lakes/Upper Slocan Valley CHC	176%	159%	67%	0%
9	Greater Trail CHC	119%	64%	104%	14%
10	Boundary CHC	107%	81%	95%	0%
	British Columbia	100%	100%	100%	100%

Figure F16 below presents the age-adjusted utilization of hospital cases for WKBHR CHCs.

Figure F16: Age Adjusted Utilization of Hospital Days, WKBHR CHCs, 1998-99

Peer CHC		Acute	ALC	EC	Rehab	SDC
Age adjusted rate						
6	Nelson & Area CHC	136.0	2.2	2.7	0.2	72.5
7	Castlegar & District CHC	160.3	2.3	1.0	0.3	71.3
8	Arrow Lakes/Upper Slocan Valley CHC	207.7	2.6	1.0	0.0	59.0
9	Greater Trail CHC	121.4	1.3	2.1	0.1	97.3
10	Boundary CHC	118.9	3.3	1.1	0.0	48.2
	British Columbia	97.5	2.6	1.8	0.3	60.7
As percent of BC rate						
6	Nelson & Area CHC	139%	84%	152%	66%	119%
7	Castlegar & District CHC	164%	89%	54%	92%	117%
8	Arrow Lakes/Upper Slocan Valley CHC	213%	101%	58%	0%	97%
9	Greater Trail CHC	125%	51%	114%	27%	160%
10	Boundary CHC	122%	126%	63%	0%	79%
	British Columbia	100%	100%	100%	100%	100%

PEER CHCS – 5-YEAR UTILIZATION TRENDS

The age-adjusted acute care hospital utilization (in terms of days) of residents of NAHC, the peer CHCs and BC over the five years from 1994-95 to 1998-99 is shown below in Figure F17.

All CHCs and BC had a drop in the age-adjusted acute care day utilization rate. BC dropped 18 percent, while NAHC had the second smallest drop at 12 percent. Sea to Sky CHC had the greatest drop, at 27 percent.

Figure F17: Age Adjusted Acute Care Utilization of Hospital Days, 1994-95 to 1998-99, Peer CHCs

Peer CHC		94-95	95-96	96-97	97-98	98-99	5 yr change
6	Nelson & Area CHC	785	722	722	696	687	-12%
16	Sunshine Coast CHC	708	649	638	610	603	-15%
18	Sea to Sky CHC	880	816	771	663	642	-27%
20	Campbell River/Nootka CHC	737	670	665	630	602	-18%
24	North Peace CHC	796	756	730	781	741	-7%
28	Terrace & Area CHC	869	775	740	704	725	-16%
	British Columbia	705	654	625	600	575	-18%

The age-adjusted ALC hospital utilization (in terms of days) of residents of NAHC, the peer CHCs and BC over the five years from 1994-95 to 1998-99 is shown below in Figure F18.

All CHCs and BC all had increases in the age-adjusted ALC day utilization rate. BC increased 57 percent, while NAHC increased over 5,000 percent, due to a very low utilization in 1994-95. As previously noted, the use of the ALC designation was being implemented over the five years shown in this historical summary. The large increases in ALC utilization are therefore a result of implementation issues.

Figure F18: Age Adjusted ALC Utilization of Hospital Days, 1994-95 to 1998-99, Peer CHCs

Peer CHC		94-95	95-96	96-97	97-98	98-99	5 yr change
6	Nelson & Area CHC	1	5	6	15	34	5107%
16	Sunshine Coast CHC	30	38	38	30	38	26%
18	Sea to Sky CHC	40	52	5	70	44	8%
20	Campbell River/Nootka CHC	58	91	134	180	245	325%
24	North Peace CHC	6	33	98	149	168	2605%
28	Terrace & Area CHC	41	74	64	72	98	141%
	British Columbia	42	42	49	58	66	57%

The age-adjusted extended care hospital utilization (in terms of days) of residents of NAHC, the peer CHCs and BC over the five years from 1994-95 to 1998-99 are shown below in Figure F19.

BC had an 8 percent decrease in utilization over the 5 years while NAHC had an 8 percent increase. The other CHCs varied widely in their utilization changes, from an increase of 117 percent for North Peace CHC to a decrease of 47 percent for Terrace & Area CHC.

Figure F19: Age Adjusted EC Utilization of Hospital Days, 1994-95 to 1998-99, Peer CHCs

Peer CHC		94-95	95-96	96-97	97-98	98-99	5 yr change
6	Nelson & Area CHC	810	1,352	846	975	877	8%
16	Sunshine Coast CHC	584	696	691	812	815	40%
18	Sea to Sky CHC	902	1,314	821	1,575	681	-25%
20	Campbell River/Nootka CHC	933	762	721	369	827	-11%
24	North Peace CHC	504	905	1,159	764	1,092	117%
28	Terrace & Area CHC	871	2,737	2,682	157	460	-47%
	British Columbia	758	743	719	751	695	-8%

The age-adjusted surgical day care hospital utilization (in terms of cases) of residents of NAHC, the peer CHCs and BC over the five years from 1994-95 to 1998-99 is shown below in Figure F20.

BC had a 7 percent decrease in utilization over the 5 years while NAHC had a 2 percent increase. The other CHCs ranged from an increase of 12 percent for North Peace CHC to a decrease of 1 percent for Campbell River/Nootka CHC.

Figure F20: Age Adjusted Surgical Day Care Utilization of Hospital Days, 1994-95 to 1998-99, Peer CHCs

Peer CHC	94-95	95-96	96-97	97-98	98-99	5 yr change
6 Nelson & Area CHC	71	72	70	72	73	2%
16 Sunshine Coast CHC	51	53	51	51	53	4%
18 Sea to Sky CHC	51	50	50	55	55	9%
20 Campbell River/Nootka CHC	72	76	74	76	72	-1%
24 North Peace CHC	49	55	53	53	55	12%
28 Terrace & Area CHC	71	70	77	78	71	1%
British Columbia	65	66	65	63	61	-7%

PROJECTION OF ACUTE INPATIENT CARE

This section develops alternative projections of inpatient bed utilization at the Health Campus to the years 2005, 2010 and 2015. The projections are based on the utilization information shown above as obtained from PURRFECT and on population projections PEOPLE 25.

The methodology is as follows:

- The rate of utilization in terms of cases per 1000 is projected
- Multiplying the projected population by the projected number of cases per 1000 results in the projected number of cases.
- The average length of stay (ALOS) is projected.
- Multiplying the number of projected cases by the projected ALOS results in projected days.
- The projected number of days are divided by 365 and divided by the projected occupancy rate (80 percent) to arrive at a projected number of beds.

Note that in accordance with the assumptions of "The Health Service Delivery Plan" (HMRG, 1999), no change was made in the referral patterns among CHCs except for NAHC.

The two other CHCs besides NAHC which are major users of KLRH are Arrow Lakes/Upper Slocan Valley CHC and Castlegar & District CHC.

Projection Scenarios

Projections of population are readily available from PEOPLE 25. Therefore projections were based on two differing scenarios, which were identified as "Rate Decline" and "Closer to Home".

Rate Decline recognizes that there has been a very long-term trend (30+ years) across Canada in the reduction of acute inpatient care utilization rates. In addition, the 5 years of historical data available shows a continuing decline in utilization rates. The scenario Rate Decline scenario projects a continuation of drops in cases per 1000 at a rate of 0.5 percent per year, recognizing that the gains of the past may not be fully continued into the future, due at least in part to increase average age and acuity of patients.

Closer to Home uses the declining rates of cases per 1000 of the Rate Decline scenario, but increases the NAHC retention rate of inpatient care. The historical retention rate has averaged 65 percent of cases. The Closer to Home scenario projects an increase to 67.5 percent by 2005 and 70 percent for 2010 and 2015. The Closer to Home scenario is consistent with existing NAHC plans for recruitment of physicians and other health professionals.

Note that in both scenarios, the ALOS was held constant at historical rates, since it was felt that there was little potential to reduce ALOS significantly below the existing stay of about 4.5 days.

Projection of Cases

Figure F21 below presents the existing and projected scenario for cases at KLRH.

The scenario Rate Decline scenario projects a continuation of drops in cases per 1000 at a rate of 0.5 percent per year. The Closer to Home scenario uses the declining rates of cases per 1000 of the Rate Decline scenario, but increases the NAHC retention rate of cases per 1000.

Figure F21: Historical and Projected Cases at KLRH

CHC	Historical					Rate Decline			Closer to home		
	94-95	95-96	96-97	97-98	98-99	2005	2010	2015	2005	2010	2015
Nelson and Area	2,643	2,567	2,582	2,512	2,554	2,696	2,877	3,055	2,833	3,135	3,329
Arrow Lakes/Upper Slocan Valley	163	166	146	165	136	157	157	157	157	157	157
Castlegar & District	234	192	177	192	192	191	189	186	191	189	186
Other RHB/CHCs	222	189	207	209	211	202	197	192	202	197	192
Total	3,262	3,115	3,113	3,078	3,093	3,247	3,420	3,589	3,384	3,678	3,863

Projection of Days of Care

Figure F22 below presents the existing and projected scenarios for days of care at KLRH.

The Rate Decline projection multiplies the number of cases and ALOS in the Rate Decline scenario. The result is about 16,622 days by 2015, an increase of 15 percent from 98-99. Population is projected to increase by over 25 percent over the same period.

The Closer to Home projection results in 17,590 days, an increase of 24 percent from 98-99.

Figure F22: Historical and Projected Days of Care at KLRH

CHC	Historical					Rate Decline			Closer to home		
	94-95	95-96	96-97	97-98	98-99	2005	2010	2015	2005	2010	2015
Nelson and Area	12,739	11,963	11,385	11,319	12.088	12,471	13,307	14,129	13,105	14,501	15,397
Arrow Lakes/Upper Slocan Valley	701	803	641	697	520	674	678	675	674	678	675
Castlegar & District	1,220	857	767	782	806	853	841	827	853	841	827
Other RHB/CHCs	761	738	797	685	742	728	709	690	728	709	690
Total	15,422	14,361	13,590	13,483	14,155	14,726	15,535	16,322	15,360	16,729	17,590

Projection of Beds

Figure F23 below presents the historical and projected bed requirements (not actual beds) for KLRH.

The Rate Decline projection results in projected beds required of 50 in 2005, 53 in 2010 and 56 in 2015.

The Closer to Home projection results in projected beds required of 53 in 2005, 57 in 2010 and 60 in 2015.

Figure F23: Historical and Projected Beds at KLRH

CHC	Historical					Rate Decline			Closer to home		
	94-95	95-96	96-97	97-98	98-99	2005	2010	2015	2005	2010	2015
Nelson and Area	44	41	39	39	41	43	46	48	45	50	53
Arrow Lakes/Upper Slocan Valley	2	3	2	2	2	2	2	2	2	2	2
Castlegar & District	4	3	3	3	3	3	3	3	3	3	3
Other RHB/CHCs	3	3	3	2	3	2	2	2	2	2	2
Total	53	49	47	46	48	50	53	56	53	57	60

It is recommended to use the year 2015 as the planning target, since this will accommodate 10 years of facility operation after a presumed opening in 2005.

The Closer to Home scenario assumes the same decline in cases per 1000 as the Rate Decline scenario, but includes consideration of continuing improvement in capability of NAHC resources to be able to provide more care for NAHC residents within NAHC.

It is recommended to use the Closer to Home scenario and plan on 60 acute care beds as a target value to begin facility planning.

APPENDIX G – CONTINUING CARE UTILIZATION

This appendix presents the data on the continuing care utilization by NAHC residents from the PURRFECT database.

Figure G1 presents the age-adjusted utilization rates in terms of cases, days, visits and hours by residents of the peer CHCs.

The extremely low rate of adult day care utilization in 98-99 for NAHC is a data anomaly since previous years rates are similar to peer CHCs. The NAHC extended care utilization rate was second highest of the peer CHCs, as was the NAHC home nursing care visit utilization rate.

The NAHC rate of home support hours utilization was about 20 percent higher than the provincial average and was the third highest of the 6-peer CHCs.

Figure G1: Age-Adjusted Utilization of Continuing Care Services, Peer CHCs, 1998-99

Peer CHC		Adult Day Care Cases	Adult Day Care Days	Extended Care Cases	Extended Care Days	Home Nursing Care Cases	Home Nursing Care Visits	Home Support Cases	Home Support Hours	Resident-ial Care Cases	Resident-ial Care Days
Age adjusted rate											
6	Nelson & Area CHC	0.1	1	6	1,147	14	369	16	2,318		
16	Sunshine Coast CHC	1.6	32	3	587	7	136	10	1,340		
18	Sea to Sky CHC	1.7	86	4	744	7	212	13	2,031		
20	Campbell River/Nootka CHC	2.3	80	4	808	11	284	17	3,868		
24	North Peace CHC	3.8	86	6	1,152	15	395	14	1,745		
28	Terrace & Area CHC	1.6	75	5	1,036	12	396	13	2,270		
	KBHSS	1.4	33	5	1,059	14	378	16	2,494		
	British Columbia	1.4	49	4	944	10	188	12	1,940		
As percent of BC rate											
6	Nelson & Area CHC	7%	2%	136%	122%	134%	196%	141%	119%		
16	Sunshine Coast CHC	114%	66%	60%	62%	71%	72%	88%	69%		
18	Sea to Sky CHC	123%	176%	79%	79%	72%	113%	110%	105%		
20	Campbell River/Nootka CHC	163%	165%	85%	86%	105%	151%	148%	199%		
24	North Peace CHC	270%	177%	128%	122%	151%	210%	120%	90%		
28	Terrace & Area CHC	115%	154%	107%	110%	122%	211%	113%	117%		
	KBHSS	101%	67%	123%	112%	135%	201%	135%	129%		
	British Columbia	100%	100%	100%	100%	100%	100%	100%	100%		

Figure G2 presents the age-adjusted utilization rates in terms of cases, days, visits and hours by residents of the WKBHR CHCs.

NAHC had an extremely low rate of adult day care utilization. The NAHC extended care utilization rate was second highest of the WKBHR CHCs.

The NAHC rate of home support hours utilization was the second lowest of the WKBHR CHCs.

Figure G2: Age-Adjusted Utilization of Continuing Care Services, WKBHR CHCs, 1998-99

CHC	Adult Day Care Cases	Adult Day Care Days	Extended Care Cases	Extended Care Days	Home Nursing Care Cases	Home Nursing Care Visits	Home Support Cases	Home Support Hours	Resident-ial Care Cases	Resident-ial Care Days
Age adjusted rate										
6 Nelson & Area CHC	0.1	1	6	1,147	14	369	16	2,318	11	2,386
7 Castlegar & District CHC	1.9	50	5	883	18	335	17	2,944	15	2,595
8 Arrow Lakes/Upper Slocan Valley CHC			2	489	12	581	18	3,612	12	3,402
9 Greater Trail CHC	2.7	55	7	1,310	12	327	13	1,843	15	3,620
10 Boundary CHC	1.8	49	4	863	13	438	18	3,061	10	2,288
WKBHR	1.4	33	5	1,059	14	378	16	2,494		
British Columbia	1.4	49	4	944	10	188	12	1,940		
As percent of BC rate										
6 Nelson & Area CHC	7%	2%	136%	122%	134%	196%	141%	119%		
7 Castlegar & District CHC	133%	103%	109%	94%	174%	178%	145%	152%		
8 Arrow Lakes/Upper Slocan Valley CHC	0%	0%	52%	52%	114%	309%	157%	186%		
9 Greater Trail CHC	190%	113%	151%	139%	120%	174%	111%	95%		
10 Boundary CHC	126%	100%	92%	91%	132%	233%	152%	158%		
WKBHR	101%	67%	123%	112%	135%	201%	135%	129%		
British Columbia	100%	100%	100%	100%	100%	100%	100%	100%		

Figure G3 presents a closer look at the 5-year trend of adult day care utilization rates of NAHC and the peer CHCs. It is clear that the very low rate in 98-99 is clearly an anomaly and that the 5-year history puts NAHC well within the range of its peers.

Figure G3: Age-Adjusted Utilization of Adult Day Care, Peer CHCs, 1994-95 to 1998-99

Peer CHC	94-95	95-96	96-97	97-98	98-99	5 yr change
Cases						
6 Nelson & Area CHC	2.5	2.3	2.3	2.3	0.1	-96%
16 Sunshine Coast CHC	2.6	2.3	1.9	1.8	1.6	-38%
18 Sea to Sky CHC	0.1	1.7	2.0	2.3	1.7	1535%
20 Campbell River/Nootka CHC	2.0	2.2	2.6	2.0	2.3	16%
24 North Peace CHC	3.4	3.5	4.3	3.9	3.8	11%
28 Terrace & Area CHC	0.1	1.9	1.7	2.0	1.6	1358%
British Columbia	1.5	1.6	1.5	1.5	1.4	-8%
Days						
6 Nelson & Area CHC	122	117	113	88	1	-99%
16 Sunshine Coast CHC	78	81	65	55	40	-49%
18 Sea to Sky CHC	2	13	30	32	30	1185%
20 Campbell River/Nootka CHC	55	47	51	47	50	-8%
24 North Peace CHC	43	44	37	38	36	-16%
28 Terrace & Area CHC	4	21	28	25	31	610%
British Columbia	53	53	51	52	49	-7%

Figure G4 presents a closer look at the 5-year trend of extended care utilization rates in terms of cases and days of NAHC and the peer CHCs.

The NAHC trend of a gradual rise in utilization rates is contrary to a general trend of falling utilization rates. In addition, the NAHC rates are among the highest of the peer CHCs.

Figure G4: Age-Adjusted Utilization of Extended Care, Peer CHCs, 1994-95 to 1998-99

Peer CHC	94-95	95-96	96-97	97-98	98-99	5 yr change
Cases						
6 Nelson & Area CHC	5.7	5.4	5.4	5.9	6.0	5%
16 Sunshine Coast CHC	2.9	3.2	3.3	2.6	2.7	-10%
18 Sea to Sky CHC	4.4	3.8	3.2	3.6	3.5	-20%
20 Campbell River/Nootka CHC	3.8	3.2	3.5	2.8	3.8	-1%
24 North Peace CHC	6.8	5.9	6.1	5.7	5.7	-16%
28 Terrace & Area CHC	4.9	3.9	4.3	4.2	4.7	-3%
British Columbia	4.5	4.4	4.4	4.4	4.4	-1%
Days						
6 Nelson & Area CHC	1,062	1,058	1,035	1,072	1,147	8%
16 Sunshine Coast CHC	673	684	641	595	587	-13%
18 Sea to Sky CHC	813	760	706	723	744	-9%
20 Campbell River/Nootka CHC	711	755	754	749	808	14%
24 North Peace CHC	1,234	1,133	1,112	1,168	1,152	-7%
28 Terrace & Area CHC	1,093	914	808	963	1,036	-5%
British Columbia	973	958	952	944	944	-3%

Figure G5 present a closer look at the 5-year trend of home nursing care utilization rates in terms of cases and visits of NAHC and the peer CHCs.

The NAHC rates are among the highest of the peer CHCs. The rates for NAHC have been relatively constant, not falling or rising in great magnitude, as was the case for several of the peer CHCs.

Figure G5: Age-Adjusted Utilization of Home Nursing Care, Peer CHCs, 1994-95 to 1998-99

Peer CHC	94-95	95-96	96-97	97-98	98-99	5 yr change
Cases						
6 Nelson & Area CHC	13	16	14	14	14	5%
16 Sunshine Coast CHC	8	9	10	8	7	-13%
18 Sea to Sky CHC	9	7	7	8	7	-20%
20 Campbell River/Nootka CHC	12	13	10	10	11	-11%
24 North Peace CHC	10	13	14	12	15	55%
28 Terrace & Area CHC	11	11	11	11	12	14%
British Columbia	10	10	10	10	10	2%
Visits						
6 Nelson & Area CHC	362	320	320	350	369	2%
16 Sunshine Coast CHC	221	181	243	170	136	-38%
18 Sea to Sky CHC	191	163	204	175	212	11%
20 Campbell River/Nootka CHC	322	248	266	233	284	-12%
24 North Peace CHC	285	372	288	264	395	38%
28 Terrace & Area CHC	278	234	356	416	396	42%
British Columbia	191	187	195	191	188	-2%

Figure G6 presents a closer look at the 5-year trend of home support utilization rates in terms of cases and hours of NAHC and the peer CHCs.

The NAHC rates are among the highest of the peer CHCs. The rates for NAHC have been falling over the 5 years, as have the rates for most of the other peer CHCs. This decline is related to declining funding for home support programs.

Figure G6: Age-Adjusted Utilization of Home Support, Peer CHCs, 1994-95 to 1998-99

Peer CHC		94-95	95-96	96-97	97-98	98-99	5 yr change
Cases							
6	Nelson & Area CHC	20	17	18	17	16	-17%
16	Sunshine Coast CHC	18	15	14	12	10	-41%
18	Sea to Sky CHC	15	14	14	14	13	-17%
20	Campbell River/Nootka CHC	20	20	19	19	17	-14%
24	North Peace CHC	18	17	16	15	14	-24%
28	Terrace & Area CHC	16	13	13	13	13	-17%
	British Columbia	16	14	13	12	12	-28%
Hours							
6	Nelson & Area CHC	2,709	2,582	2,765	2,726	2,318	-14%
16	Sunshine Coast CHC	1,764	1,616	1,836	1,744	1,340	-24%
18	Sea to Sky CHC	2,827	1,960	2,067	2,466	2,031	-28%
20	Campbell River/Nootka CHC	3,653	3,529	3,769	3,977	3,868	6%
24	North Peace CHC	1,198	1,494	1,605	1,700	1,745	46%
28	Terrace & Area CHC	1,833	1,817	2,217	2,272	2,270	24%
	British Columbia	2,112	1,903	1,891	1,964	1,940	-8%

Figure G7 presents a closer look at the 5-year trend of residential care utilization rates in terms of cases and days of NAHC and the peer CHCs.

The NAHC rates are within range of the peer CHCs and are indeed significantly lower than the rates for the Province. The rates for NAHC have been falling over the 5 years, as have the rates for most of the other peer CHCs.

Figure G7: Age-Adjusted Utilization of Residential Care, Peer CHCs, 1994-95 to 1998-99

Peer CHC		94-95	95-96	96-97	97-98	98-99	5 yr change
Cases							
6	Nelson & Area CHC	12	11	11	12	11	-7%
16	Sunshine Coast CHC	10	10	9	8	8	-21%
18	Sea to Sky CHC	11	12	11	11	11	5%
20	Campbell River/Nootka CHC	9	8	8	7	8	-13%
24	North Peace CHC	15	14	13	13	12	-14%
28	Terrace & Area CHC	13	13	13	13	13	-6%
	British Columbia						
Days							
6	Nelson & Area CHC	2,414	2,300	2,318	2,373	2,386	-1%
16	Sunshine Coast CHC	2,011	1,949	1,836	1,698	1,655	-18%
18	Sea to Sky CHC	2,137	2,286	2,428	2,345	2,346	10%
20	Campbell River/Nootka CHC	1,984	1,952	1,835	1,777	1,752	-12%
24	North Peace CHC	3,089	2,963	2,784	2,920	2,823	-9%
28	Terrace & Area CHC	3,417	3,148	2,984	2,998	2,984	-13%
	British Columbia						

PROJECTION OF MULTILEVEL CARE BED REQUIREMENTS

Projection Scenarios

The Continuing Care Branch of the Ministry of Health utilises a model for planning purposes to evaluate the requirement for residential beds in the various Community Health Boards and Regional Health Boards of the Province.

The model is very simple. It sums all the residential care days for the entire Province by age group and then arrives a Provincial rates of days per 1,000 persons of each age group. These Provincial rates are then applied to the various Community Health Boards and Regional Health Boards of the Province.

The model does not take into account referral rates between CHCs and RHBs of the Province, nor does it take into account the unique circumstances of any CHC or RHB, which would warrant the use of rates either higher or lower than the Provincial average.

The existing beds in NAHC are: Nelson Jubilee Manor: 39, Mount St. Francis Hospital: 79, Willowhaven Centre: 82, Victoria Hospital of Kaslo: 5, for a total of 205, however, only 197 beds are funded by MOH for IC and EC residents.

The model is based on residential care beds being defined as intermediate care levels 2 and 3 and extended care.

Figure G8: Projected Bed Requirements Using CCB Planning Model

	Year			
	2000	2005	2010	2015
Days	71,123	92,716	107,881	115,975
Beds Req'd	195	254	296	318
Shortfall/Surplus	+2	-57	-99	-121

The result of the model, illustrated in Figure G8 above, as applied to the 2000 NAHC population is a requirement for 195 beds. Projection of the model's rates to 2015 results in a requirement of 318 beds, or a shortfall of 121 beds from the current number of 200.

It should be reiterated that the model does not take into account the relatively higher utilization rates of rural and remote areas being counterbalanced by the relatively lower rates in urban and highly populated areas. As such, the results of the model should be regarded as the very lowest end of the range achievable for residential care beds in NAHC.

APPENDIX G – CONTINUING CARE UTILIZATION

A scenario using the Continuing Care Renewal Plan methodology will be outlined in the Business Case.

The number of 86 multi-level care beds is recommended as a target value to begin facility planning

Note that of the 86 MLC beds on the Health Campus site 79 would be a replacement of the existing Mount St. Francis beds. The net gain of residential care beds in Nelson and Area would be 7.